2017

CFA® EXAM REVIEW

ANSWERS AND SOLUTIONS

LEVEL I CFA®

MOCK EXAM 1

WILEY

Mock Exam

1

Mock Exam 1 – Morning Session – Solutions

Questions 1–18 relate to Ethics

1. Phil Jones, CFA, has just finished researching Alpha One Inc. and is about to issue an unfavorable report on the company. His manager does not want him to state any adverse opinions about Alpha One, as it could adversely affect their firm's relations with the company, which is an important investment banking client. Which of the following actions by the manager *most likely* violates Standard I (B): Independence and Objectivity?

   A. Putting Alpha One on a restricted list
   B. Asking Jones to issue a favorable report
   C. Asking Jones to only state facts about the company

   Answer: B

   According to Standard I (B), if a firm is unwilling to allow dissemination of adverse opinions about a corporate client, it may put the company on a restricted list. This would ensure that the firm only disseminates factual information about the company.

2. Which of the following is *least likely* a violation of Standard I (D): Misconduct?

   A. Engaging in frequent fights on the trading floor
   B. Offering higher-quality services to certain clients
   C. Getting intoxicated during office hours

   Answer: B

   Offering premium levels of service to certain clients (without disclosing these premium services and making them available to all clients) is a violation of Standard III (B): Fair Dealing, but not Standard I (D): Misconduct.

3. Martha Stevens, CFA, is an investment manager who uses her friend, Robert James, exclusively for her clients' brokerage transactions. James provides better services than other brokers in return for a slightly higher price, which Stevens believes is justified. Which of the following statements is *most accurate*?

   A. Stevens is in violation of Standard III (A): Loyalty, Prudence and Care.
   B. Stevens is in violation of Standard III (B): Fair Dealing.
   C. Stevens has not violated any standard.

   Answer: C

   Stevens is justified in using James as a broker, as the slightly higher charges are justified by the better service.

4. Alexis King, CFA, an investment manager at Invest One Corporation, is asked by her supervisor to make a presentation to a potential client. In the presentation, King uses weighted composites of all similar portfolios to present the firm's performance over the past 10 years, during which the firm earned an average return of 13%. Which of the following statements is *most accurate*?

   A. King has violated Standard III (D): Performance Presentation.
   B. King has violated Standard I (C): Misrepresentation.
   C. King has not violated any standards.

   Answer: C

   King has not violated any standard, as she has not made any false statements or guarantees. Further, she used weighted composites of similar portfolios rather than a single representative account to represent the firm's performance over the period.

5. Frank Henry, CFA, works as an investment manager at Beta Financials. One of his clients offered him a free trip to Mauritius for excellent performance, which Henry accepted. Henry's boss recently learned about this arrangement from another employee, but did not do anything about the arrangement, as the client was very important to the firm. Which of the following is *most likely*?

   A. Henry violated Standard IV (B): Additional Compensation Arrangements.
   B. Henry's boss violated Standard IV (C): Responsibilities of Supervisors.
   C. Henry violated Standard IV (B): Additional Compensation Arrangements and his boss violated Standard IV (C): Responsibilities of Supervisors.

   Answer: C

   - Henry violated Standard IV (B) by not obtaining written consent from his employer before accepting the gift.
   - Henry's boss violated Standard IV (C) by failing to take appropriate action.

6. Which of the following is *least likely* a violation of Standard V (B): Communication with Clients and Prospective Clients?

   A. An analyst recommends an investment to a client without going into specific details because she feels that the client would not be able to understand the complex models involved.
   B. An analyst divulges confidential information about current clients to prospective clients.
   C. An analyst states his strong beliefs as facts in a research report.

   Answer: B

   - Divulging confidential information about a client to prospective clients is a violation of Standard III (E): Preservation of Confidentiality.
   - The other two statements describe violations of Standard V (B).

7. Which of the following is *most likely* a violation of Standard III (B): Fair Dealing?

   A. An analyst emphasizes the high returns of a trading strategy to a client without providing detailed information about the strategy.
   B. An analyst carries out trades for discretionary accounts before non-discretionary accounts.
   C. An analyst guarantees high returns on a risky investment.

   Answer: B

   - Discriminating against certain clients when carrying out trades is a violation of Standard III (B): Fair Dealing.
   - Statement A describes a violation of Standard V (B): Communication with Clients and Prospective Clients.
   - Statement C describes a violation of Standard I (C): Misrepresentation.

8. Laura Bolt, CFA, resides in a country called Lavasia, but frequently does business in Magmaland, with a client who is a citizen of Magmaland. Lavasia's law applies in this case and states that laws of the client's home country govern. Lavasia's laws are more strict than the Code and Standards, while Magmaland's laws are less strict than the Code and Standards. Bolt is *most likely* required to adhere to:

   A. The laws of Lavasia.
   B. The Code and Standards.
   C. The laws of Magmaland.

   Answer: B

   Because applicable law (Lavasia's law) states that the law of the client's home country governs (which is less strict than the Code and Standards) Bolt must adhere to the Code and Standards.

9. An analyst is flown along with a group of peers to a company's mining facilities on a chartered flight, and put up in a hotel for three days. In determining whether these arrangements violate Standard I (B): Independence and Objectivity, the analyst must consider:

   A. Whether she can remain objective and whether her integrity might be perceived by her clients to have been compromised.
   B. Whether she can remain objective and whether her employer is confident that she will remain objective.
   C. Only whether her integrity might be perceived by her clients to have been compromised.

   Answer: A

   In the final analysis, analysts must consider both, whether they remain objective and whether their integrity might be perceived by clients to have been compromised in evaluating whether such arrangements are acceptable.

10. Laura Jameson, CFA, is a portfolio manager at ALT Investments. Her firm is allocated a very significant number of shares in the IPO of Hotstock Ltd., a company that Jameson is very bullish on. Excited by the prospect of earning an excellent return for her clients, Jameson allocates the shares evenly across all accounts under management including those of her relatives. Jameson *most likely*:

   A. Violated Standard III (C): Suitability.
   B. Violated Standard III (A): Loyalty, Prudence and Care.
   C. Has not violated the Code and the Standards.

   Answer: A

   Jameson violated Standard III (C) because she did not evaluate the suitability of the investment for each account under her management. Each investor has unique return objectives and risk-tolerance levels.

11. To comply with Standard III (E): Preservation of Confidentiality, members must preserve the confidentiality of information communicated to them by:

   A. Past, current, and prospective clients.
   B. Past and current clients only.
   C. Current and prospective clients only.

Answer: A

Standard III (E) requires that members maintain the confidentiality of all information passed on to them by past, current, and prospective clients.

12. Abeer Dagha, CFA, has just been hired by Superior Investments after spending 20 years with Quality Investments. When Dagha begins her work with Superior Investments she wants to get in touch with her former clients because she knows them well and she is confident that they will follow her to her new firm. Dagha would *most likely*:

    A. Be in violation of Standard IV (A): Loyalty if she has not signed a non-compete agreement with Quality Investments and decides to contact her former clients.
    B. Be in violation of Standard IV (A): Loyalty if she uses client lists, which she took from Quality Investments with permission, to get in touch with her former clients.
    C. Not be in violation of Standard IV (A): Loyalty if she has not signed a non-compete agreement with Quality Investments, and uses contact information that she has retained in her memory.

    Answer: C

    - Standard IV (A) does not classify knowledge of names and existence of former clients as confidential information. This information can be used to benefit a new employer just as the skills and experience acquired at the previous employer can be used to now benefit the new employer.
    - Members can contact clients of their previous firm, absent a non-compete agreement.

13. Which of the following is *least likely* to violate Standard VII (B): Reference to CFA Institute, the CFA Designation and the CFA Program?

    A. A Level III candidate referring to herself as CFA, Level II.
    B. A Level III candidate awaiting results referring to himself as CFA, expected 2009.
    C. An investment manager stating, “Completion of the CFA program has enhanced my portfolio management skills.”

    Answer: C

    The other two choices are violations of Standard VII (B).

14. According to the CFA Institute Standards of Professional Conduct, which of the following must *least likely* be disclosed to clients?

    A. Referral fees
    B. Disclosures of personal holdings
    C. Additional compensation earned by the member from tutoring candidates for the CFA exams in her spare time

    Answer: C

    - According to Standard VI (A): Disclosure of Conflicts, members and candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with their respective duties to their clients, prospective clients, and their employer.
    - The scenario states that the member tutors CFA candidates during her spare time, which is unlikely to interfere with her duties to her clients. She should, however, keep her employer informed.

15. Which of the following is *least likely* a reason for the creation of GIPS Standards?

    A. To remove the effects of survivorship bias
    B. To prevent firms from presenting the performance of all portfolios under management
    C. To ensure that performance is presented consistently over a period of time

    Answer: B

    The GIPS Standards were created to prevent firms using only their top-performing portfolios to represent their overall performance.

16. Which of the following is *least likely* a characteristic of GIPS?

    A. The investment management firm must define the entity that claims compliance.
    B. All fee-paying discretionary portfolios are required to be included in composites defined according to a similar strategy or investment objective.
    C. After presenting five years of compliant history, a firm must add annual performance each year going forward up to a maximum of 10 years.

    Answer: C

    A firm is initially required to present at least five years of compliant history and must add annual performance each year going forward up to 10 years at a **minimum**.

17. Gregory Robinson, CFA, works as a research analyst at a brokerage firm. His wife, Laura Robinson, CFA, is an analyst at another firm. One morning, Robinson elects to stay at home by the side of his ill wife. He receives a call from James, an investment banker, who informs him that the two largest mining companies that Robinson covers are getting taken over at a 50% premium to their current market values. This information has not been released to the public yet. Laura overhears the entire conversation and immediately purchases the stock for her clients.

Standard II (A): Material Non-Public Information has *most likely* been violated by:

A. Mr. Robinson and James.
B. Mr. and Mrs. Robinson.
C. All three of them.

Answer: C

- All three parties have violated Standard II (A).
- Mr. Robinson violated the standard because he failed to prevent the transfer and misuse of material, non-public information.
- James had a duty to keep this non-public material information to himself.
- By trading on material non-public information, Mrs. Robinson has also violated the Standard.

18. To avoid plagiarism an analyst should *most likely* disclose:

A. The sources of widely available public information.
B. The sources of summarized reports of other analysts.
C. The sources of both widely available public information and summarized reports of other analysts.

Answer: C

According to Standard I (C): Misrepresentation, an analyst must disclose the source of the information even if it is widely available to the public. Disclosure must also be made if the analyst is using summarized versions of reports prepared by someone else.

Questions 19–32 relate to Quantitative Methods

19. An analyst rates individual stocks in the market index as under perform, neutral, or outperform. The type of scale that is used to measure this data is *most likely* a(n):

    A. Ordinal scale.
    B. Ratio scale.
    C. Interval scale.

    Answer: A

    The analyst has rated the stocks based on expected future performance. The classifications tell us nothing about the difference in performance among the classes.

20. An analyst collects the following information about an investment's returns over the last 24 months:
    Mean return = 18%
    Standard deviation of returns = 12%

    Given a risk-free rate of 5%, the Sharpe ratio for this investment is *closest to:*

    A. 2.6.
    B. 0.92.
    C. 1.083.

    Answer: C

    Sharpe ratio = (0.18 – 0.05) / 0.12 = 1.083

21. Susan estimates that the probability of the stock market rising in value over 2010 is 40%. The odds that she would offer against the market rising are *closest to*:

    A. 2 to 3.
    B. 3 to 5.
    C. 3 to 2.

    Answer: C

    The odds against an event are stated as P(event not occurring) : P(event occurring) (1 – 40%) to 40% = 3 to 2

22. Which of the following is *most likely*?

A. Investors would prefer a portfolio with a higher SF Ratio because it has a lower probability of generating a return greater than the threshold level.
B. Investors would prefer a portfolio with a higher SF Ratio because it has a lower probability of generating a return lower than the threshold level.
C. Investors would prefer a portfolio with a lower SF Ratio because it has a higher probability of generating a return higher than the threshold level.

Answer: B

Portfolios with a higher SF Ratio have a lower probability of obtaining returns lower than the threshold level and are, therefore, preferred.

23. Which of the following is *least likely* an assertion of the central limit theorem?

A. Given that the sample size is greater than 30, the distribution of the sample mean will approximately be normal regardless of the distribution of the underlying population.
B. The variance of the distribution of sample means equals the variance of the population divided by the square root of the size of the sample.
C. The mean of the population and the mean of sampling distribution are the same.

Answer: B

- The variance of the distribution of sample means equals the variance of the population mean divided by the size of the sample.
- The standard deviation of the distribution of sample means equals the standard deviation of the population mean divided by the square root of the size of the sample.

24. Which of the following combinations of sample size and sample standard deviation will *most likely* result in the narrowest confidence interval for a random variable?

	Sample Size	**Sample Standard Deviation**
A.	Greater	Lower
B.	Lower	Greater
C.	Greater	Greater

Answer: A

The *greater* the sample size and the *lower* the sample standard deviation, the *narrower* the confidence interval.

25. Which of the following tests is *most likely* used when testing the variance of a single normally distributed population?

   A. T-test
   B. Chi-square test
   C. F-test

   Answer: B

   The Chi-square test is used to test the variance of a single normally distributed population. T-tests are used when conducting tests on the mean, whereas the F-test is used to test the equality of variance of two populations.

26. Given the stated annual interest rate, an increase in the frequency of compounding *most likely*:

   A. Increases the FV but decreases the PV of an amount.
   B. Increases both the FV and PV of an amount.
   C. Decreases both the FV and PV of an amount.

   Answer: A

   An increase in compounding frequency increases the effective annual rate (EAR). Therefore:

   - The FV of an amount increases.
   - The PV of an amount falls.

27. Henry wants to borrow $100,000 to finance his business. He is offered a rate of 6% from a local bank, but is told that he would be paying an effective interest rate of 6.09%. The frequency of compounding on this loan is *closest to*:

   A. Monthly.
   B. Quarterly.
   C. Semi-annually.

   Answer: C

   Stated annual interest rate = 6%
   Effective annual interest rate with monthly compounding = $(1 + 0.06/12)^{12} - 1 = 6.17\%$
   Effective annual interest rate with quarterly compounding = $(1 + 0.06/4)^{4} - 1 = 6.14\%$
   Effective annual interest rate with semi-annual compounding = $(1 + 0.06/2)^{2} - 1 =$ **6.09%**

28. The money-market yield for a T-bill with a face value of \$1,000 that is currently priced at \$970 and has 110 days remaining until maturity is *closest to*:

A. 10.12%.
B. 10.44%.
C. 11%.

Answer: A

HPY = [(1,000 − 970) / 970] × 100 = 3.093%

Money market yield = HPY × 360/t = 3.093% × 360/110 = 10.12%

29. Mike wants to start his own business. The initial investment required is \$75,000 and the project's beta is 1.1. The estimated annual net cash flows are given below:

Year 1: 15,000
Year 2: 25,000
Year 3: 35,000
Year 4: 40,000

Mike can invest the same amount of funds in the market and expect to earn 12%, or he can purchase government securities and earn 6%. Assuming that Mike's after tax cost of debt is 7% and his target debt-to-equity ratio is 0.4, the NPV and IRR for the project are *closest to*:

	NPV (\$)	**IRR (%)**
A.	8,656	16.58
B.	8,656	16.00
C.	10,745	16.58

Answer: C

Cost of equity = 0.06 + 1.1 (0.12 – 0.06) = 12.6%

WACC = 0.126 (1 / 1.4) + 0.07 (0.4 / 1.4) = 11%

Calculator keystrokes:

[CF][2nd][CE|C]
75000 [+/-] [ENTER]
[↓] 15000 [ENTER]
[↓] [↓] 25000 [ENTER]
[↓] [↓] 35000 [ENTER]
[↓] [↓] 40000 [ENTER]
[NPV] 11 [ENTER]
[↓] [CPT]
NPV = **10,745.01**
[IRR] [CPT]
IRR = **16.58%**

30. A sample of five students scored 75%, 86%, 92%, 63%, and 52% on a test. The standard deviation of the sample is *closest to*:

A. 14.65%.
B. 16.38%.
C. 13.10%.

Answer: B

$$\text{Mean score} = \frac{75+86+92+63+52}{5} = 73.6\%$$

Sample Standard deviation

$$= \frac{[(75-73.6)^2+(86-73.6)^2+(92-73.6)^2+(63-73.6)^2+(52-73.6)^2]^{05}}{5-1} = 16.38\%$$

31. An educational institute that provides classes for the CFA exam has two batches enrolled for the June 2010 exam. Historically it has been observed that 69% of the candidates enroll in the weekday batch, while the remaining 31% prefer the weekend batch. The historical pass rate for the weekday batch has been 52%, and has been 63% for the weekend batch.

Given that a student failed the exam, the probability that she was from the weekend batch is *closest to*:

A. 34.6%.
B. 25.72%.
C. 11.47%.

Answer: B

This question requires us to use Bayes' Formula for updated probability.

We have to find P (weekend | failure).

We are given the following information:
P (weekday) = 0.69
P (weekend) = 0.31
P (pass | weekday) = 0.52
P (pass | weekend) = 0.63

We can infer the following:
P (fail | weekday) = 1 − P (pass | weekday) = 1 – 0.52 = 0.48
P (fail | weekend) = 1 – P (pass | weekend) = 1 − 0.63 = 0.37

$$\begin{aligned} P\,(\text{fail}) &= P(\text{fail}|\text{weekday}) \times P\,(\text{weekday}) + P(\text{fail}|\text{weekend}) \times P(\text{weekend}) \\ &= (0.48)(0.69) + (0.37)(0.31) = 0.4459 \end{aligned}$$

$$P\,(\text{weekend}|\text{fail}) = \frac{P\,(\text{fail}|\text{weekend}) \times P(\text{weekend})}{P\,(\text{fail})}$$

$$P(\text{weekend}|\text{fail}) = (0.37)(0.31)/0.4459 = 0.2572 \text{ or } 25.72\%$$

A short video on the application of Bayes' formula can be found here:
www.youtube.com/watch?v=_yV-jw_gfUc
www.youtube.com/watch?v=21aaeHBh0L4

32. Twelve athletes participate in a race. The number of different ways that the gold, silver, and bronze medals can be awarded to these athletes is *closest to*:

A. 1,320.
B. 220.
C. 36.

Answer: A

The order in which the top three athletes finish the race is important, as it determines which medal is awarded. Therefore, we use the permutations formula.

$${}_{12}P_3 = \frac{12!}{(12-3)!} = 1{,}320$$

Questions 33–44 relate to Economics

33 An increase in the price of Product B leads to an increase in demand for Product A. Product A and Product B are *most likely*:

A. Inferior goods.
B. Substitute goods.
C. Supernormal goods.

Answer: B

The *increase* is price of Product B results in an *increase* in demand for Product A. The cross elasticity of demand for these two products is *positive.* Therefore, they are substitutes.

34. A firm operates in perfect competition. Given that price lies between average variable cost and average total cost, the firm's short-run and long-run operating decisions will *most likely* be:

	Short Run	**Long Run**
A.	Continue to operate	Exit market
B.	Continue to operate	Continue to operate
C.	Shut down	Exit market

Answer: A

When price lies between AVC and ATC, the firm will remain in production in the short run, as it meets all variable costs and covers a portion of its fixed costs.

To remain in business in the long run, the firm must break even or cover all costs, so price must at least equal ATC.

35. The lowest point on the long-run average cost curve is *most likely* known as the firm's:

A. Minimum efficient scale.
B. Maximum efficient scale.
C. Econometric scale.

Answer: A

The minimum point on the LRAC curve is referred to as the minimum efficient scale. The **minimum efficient scale** is the optimal firm size under perfect competition over the long run.

36. Increasing and decreasing marginal returns to labor *most likely* explain the U-shape of the:

A. Short-run marginal cost curve.
B. Long-run average cost curve.
C. Short-run total product curve.

Answer: A

- Changes in marginal returns to a variable factor of production are the reason behind the U-shape of the marginal cost curve and SR average cost curve.
- The U-shape of the long-run average cost curve is explained by economies and diseconomies of scale.
- The total product curve is not U-shaped. It initially increases at an increasing rate and then only increases at a decreasing rate.

37. Which of the following is *most likely* regarding the Stackelberg oligopoly model?

A. Firms in the industry make their decisions sequentially.
B. None of the firms in the industry can increase profits by unilaterally changing its price.
C. All firms in the industry are interdependent.

Answer: A

In contrast to the Cournot model (which assumes that decision-making is simultaneous), the Stackelberg model (also known as dominant firm, or top dog model) assumes that decision-making is sequential.

Under this model, the dominant firm can increase its profits by unilaterally increasing its price (unlike Nash equilibrium). Further, the dominant firm is independent, while all other firms take their cue from the actions of the dominant firm.

38. The difference between total value to buyers and total variable cost of producers is *most likely* known as:

   A. Consumer surplus.
   B. Producer surplus.
   C. Total surplus.

   Answer: C

   - The difference between total value to buyers and total variable cost of producers represents total surplus (the sum of consumer and producer surplus).
   - Consumer surplus is the difference between the total value that consumers place on units purchased and the total cost of purchasing them.
   - Producer surplus is the difference between total revenue and total variable cost.

39. If economic data suggest that the economy is undergoing an expansion caused by an increase in aggregate demand (AD), investors should *least likely* increase their investments in:

   A. Cyclical companies.
   B. Commodity-oriented companies.
   C. Defensive companies.

   Answer: C

   If economic data suggest that the economy is undergoing an expansion caused by an increase in AD, going forward corporate profits will be expected to rise, commodity prices will be expected to increase, interest rates will be expected to rise, and inflationary pressures will build in the economy. Therefore, investors should:

   - Increase investments in cyclical companies as their earnings would rise significantly in this scenario.
   - Increase investments in commodities and/or commodity-oriented companies.
   - Reduce investments in defensive companies, as their profits would not rise as significantly as those of cyclical companies.

40. Which of the following is *least likely* positive for a Giffen good?

A. The relationship between the income effect and the price change
B. The relationship between the substitution effect and the price change
C. The relationship between quantity demanded and the price change

Answer: B

For a Giffen good, when price falls:

- The income effect results in a decrease in quantity demanded (positive relation).
- The substitution effect results in an increase in quantity demanded (negative relation).
- Overall, the income effect dominates so quantity demanded falls (positive relation).

41. Under which of the following types of trade restrictions is the welfare loss to the importing company *most likely* to be the lowest?

A. Tariffs
B. Quotas
C. Voluntary export restraints

Answer: A

- In a tariff, the welfare loss is reduced by tariff revenue earned by the government.
- In a quota, the quota rents may be captured by the importing country or the exporting country.
- In a VER, the quota rents are captured by the exporting country.

42. Which of the following is the Fed *least likely* to do if wants to increase the quantity of money?

A. Lower the discount rate
B. Sell securities in an open-market operation
C. Lower the required reserve ratio

Answer: B

If it wants to increase the quantity of money through an open-market operation, the Fed will *purchase* securities from the open market.

43. A current account surplus *least likel*y results from:

A. High private savings.
B. High private investment.
C. A government surplus.

Answer: B

CA = SP + SG – I

Therefore, a currency account surplus results from:

- High private savings.
- A government surplus.
- Low private investment.

44. Consider the following statements:

Statement 1: Net exports vary negatively with domestic income and with the domestic price level.

Statement 2: The government's fiscal deficit varies negatively with domestic income.

Which of the following is *most likely*?

A. Both statements are correct.
B. Only one statement is correct.
C. Both statements are incorrect.

Answer: A

Both statements are correct.

- An increase in domestic income increase imports, reducing net exports.
- An increase in the domestic price level increases imports and decreases exports, reducing net exports.
- An increase in income increases tax revenue, reducing the budget deficit.

Questions 45–68 relate to Financial Reporting and Analysis
Assume IFRS unless otherwise stated.

45. Accounting methods, estimates, and assumptions, and information about management and director compensation are *most likely* to be found in:

	Accounting Methods, Estimates, and Assumptions	Management and Director Compensation
A.	Footnotes	Proxy statement
B.	Footnotes	MD&A
C.	MD&A	Auditor's report

Answer: A

- Accounting methods, estimates, and assumptions are likely to be found in the financial statement footnotes.
- Information regarding management and director compensation is likely to be contained in the proxy statement.

46. A company has paid cash for an expense that has been incurred, but not yet recognized on the financial statements. The company will *most likely* record:

A. An accrued expense, an asset.
B. A prepaid expense, an asset.
C. An accrued revenue, a liability.

Answer: B

The company has paid cash before the recognition of the expense in its books. This will result in a prepaid expense asset being created.

47. At the beginning of 2009, Abner Inc. entered into a contract to build a road for the government. The project will be completed in four years. The following information is available about the contract:

Total revenue	\$15,000,000
Total cost of project	\$12,000,000
Cost incurred during 2009	\$2,000,000

If the outcome of the project cannot be measured reliably, revenue recognized during 2009 under U.S. GAAP and IFRS is *most likely*:

	IFRS	**U.S. GAAP**
A.	$2,000,000	$2,000,000
B.	None	None
C.	$2,000,000	None

Answer: C

Note that this question relates to a period prior to 2014 when the converged standards were issued.

When the outcome of a long-term project cannot be measured reliably:

- Under U.S. GAAP, the completed contract method is used. No revenue is recognized until project completion.
- Under IFRS, revenue is recognized to the extent of costs incurred during the period.

48. An analyst gathered the following information about a company that follows U.S. GAAP for a given year:

Beginning shareholders' equity	$1,350,000
Net income	$250,000
Dividends declared	$75,000
Dividends paid	$85,000
Ending shareholders' equity	$1,575,000

The company's comprehensive income for the year is *closest to*:

A. $50,000.
B. $300,000.
C. $60,000.

Answer: B

Beginning shareholders' equity + Net income + Other comprehensive income – Dividends declared = Ending shareholders' equity.

Other comprehensive income = 1,575,000 + 75,000 – 250,000 – 1,350,000 = 50,000

Comprehensive income = Other comprehensive income + Net income = $300,000

49. Assume U.S. GAAP holds. An analyst gathered the following information about a company for a given year:

	$m
Net income	12.5
Depreciation	1.25
Amortization	0.5
Interest expense	3
Net capital expenditure	1.75
Dividends paid	0.25
Working capital investment	1.15
Tax rate	35%

Free cash flow to the firm for the year is *closest to*:

A. $13.3m.
B. $13.05m.
C. $9.4m.

Answer: A

FCFF = NI + NCC + [Int × (1 − t)] − FC Inv − WC Inv
FCFF = 12.5 + 1.75 + [3 × (1 − 0.35)] − 1.75 − 1.15 = $13.3m

50. Which of the following is *least likely* regarding the classification of various items on the cash flow statement under IFRS and U.S. GAAP?

		IFRS	**U.S. GAAP**
A.	Dividends paid out	CFO or CFF	CFF
B.	Dividends received	CFO or CFI	CFO
C.	Interest received	CFO or CFF	CFO

Answer: C

Under IFRS, interest received can be classified as CFO or CFI.

51. Which of the following is *most likely* regarding reversals of inventory write-downs for manufacturing companies?

	IFRS	**U.S. GAAP**
A.	Permitted, but only to the extent of a previously recognized write-down	Not permitted
B.	Permitted, and the new value can exceed the original amount recognized	Permitted, but only to the extent of a previously recognized write-down
C.	Not permitted	Not permitted

Answer: A

For companies that are not engaged in mining or agricultural activities:

- U.S. GAAP prohibits the reversal of any inventory write-down.
- IFRS permits a reversal to the extent of the write-down that had been previously recorded.

52. Consider the following statements:

Statement 1: In the first year of a company's operations, FIFO and LIFO will result in the same amount for cost of goods available for sale if prices have been declining over the year.

Statement 2: In a period of falling prices, use of LIFO will enable a firm to retain more cash.

Which of the following is *most likely*?

A. Both statements are incorrect.
B. Only Statement 1 is incorrect.
C. Only Statement 2 is incorrect.

Answer: C

- Cost of goods available for sale is the sum of opening inventory and purchases. In the first year of a company's operations, the inventory cost flow assumption has no impact on the amount recognized as cost of goods available for sale.
- In a period of falling prices, use of LIFO will result in lower COGS, higher net income, higher taxes, and *lower* cash.

53. A company's management wishes to report higher earnings for the next few years. In order to accomplish this, management will *most likely*:

A. Increase the asset's useful life estimate and the estimated salvage value.
B. Increase the asset's useful life estimate and reduce the salvage value estimate.
C. Increase the estimated salvage value and reduce the useful life estimate.

Answer: A

In order to report higher earnings, a company must recognize lower depreciation expense. This is accomplished by increasing the asset's useful life estimate and increasing the salvage value estimate.

54. Consider an asset whose carrying amount was revalued downwards in 2014. In 2015, if the value of the asset is revised upwards, the impact on reported leverage and return on equity will *most likely* be:

	Reported Leverage	Return on Equity
A.	Improves	Falls
B.	Worsens	Increases
C.	Improves	Increases

Answer: C

Under the revaluation model (IFRS), if the upward revaluation is reversing a previous downward revaluation, the gain flows through the income statement (to increase net income) and then increases shareholders' equity. If the upward revaluation is not reversing a previous downward revaluation, the gain flows through the revaluation surplus and increases shareholders' equity directly.

- In 2015, assets increase along with shareholders' equity so reported leverage ratios improve (decrease).
- The return on equity also increases as net income and shareholders' equity both increase. The numerator effect dominates and results in an increase in the ratio.

55. A company reports income tax expense of $25,000. During the year it reports a decrease in deferred tax liabilities of $12,500 and an increase in deferred tax assets of $5,000. The company's taxes payable for the year are *closest to*:

A. $42,500.
B. $7,500.
C. $17,500.

Answer: A

ITE = TP + Change in DTL − Change in DTA
TP = $25,000 − (–$12,500) + $5,000 = $42,500

56. Which of the following sources of changes in the net pension asset/liability is most likely to be recognized in other comprehensive income?

A. Service costs.
B. Net interest income.
C. Actuarial losses.

Answer: C

Under IFRS, actuarial losses are included in remeasurements, which are recognized in other comprehensive income.

57. Under the effective interest method, a company that issues zero-coupon bonds will *least likely* report:

A. A decrease in its debt-to-assets ratio each year over the term of the bonds.
B. A higher cash outflow from financing activities upon maturity than the inflow recorded under financing activities upon issuance.
C. No related cash outflows from operating activities for any period during the bond's term.

Answer: A

A company that issues zero-coupon bonds basically issues them at a deep discount to par. The book value of the liability increases each year over the term and approaches the bonds' par value. Therefore, the company's reported debt-to-assets ratio will *increase* each year.

58. ABC Corp. purchases a milling machine. The company considers the machine's rotating cutter to be a significant component. Which of the following is *least likely* an additional estimate that the company will be required to make if it depreciates the milling machine using the component method instead of depreciating it as a whole?

A. Useful life of milling machine
B. Useful life of cutter
C. Portion of residual value attributable to cutter

Answer: A

ABC would need to estimate the useful life of the milling machine regardless of whether it chooses to depreciate it using the component method or not. However, the company would be required to estimate the useful life and residual value of the cutter (component) only if it plans to use the component method.

59. Which of the following is *most likely* regarding finance costs incurred during the construction of an asset:

A. Under U.S. GAAP they must be capitalized, while under IFRS companies may choose to capitalize these costs.
B. These costs must be capitalized under both U.S. GAAP and IFRS.
C. Under IFRS they must be capitalized, while under U.S. GAAP companies may choose to capitalize these costs.

Answer: B

- Finance costs incurred during construction of an asset must be capitalized under U.S. GAAP and IFRS.

60. A company owns a machine that is carried at $6,000. It estimates that the machine will yield future cash flows amounting to $5,200, and that the present value of these cash flows is $4,700. The fair value of the machine is believed to be $4,800, while selling costs would total $200. The amount of impairment charged against this asset under IFRS and U.S. GAAP would be *closest to*:

	IFRS	**U.S. GAAP**
A.	$1,300	$800
B.	$1,400	$1,300
C.	$1,300	$1,200

Answer: C

IFRS: Compare carrying amount ($6,000) to recoverable amount, which equals the higher of fair value less costs to sell ($4,800 – $200 = $4,600) and value in use ($4,700). Impairment charge equals ($6,000 – $4,700 = **$1,300)**.

U.S. GAAP:
Asset is impaired if carrying value exceeds recoverable amount, which equals the total value of undiscounted cash flows expected from the asset.

To measure the impairment loss, compare carrying amount ($6,000) to fair value ($4,800). Impairment charge equals ($6,000 – $4,800 = **$1,200)**.

61. On January 1, 2008, Alpha Manufacturers purchased a machine for $2.5 million. For accounting purposes, the asset is depreciated on a 10% straight-line basis. For tax purposes it is depreciated on a 15% straight-line basis. On January 1, 2009, the machine is revalued at $2.6 million and it is estimated that the machine will be used for a further 25 years after revaluation. For tax purposes, the revaluation is not recognized.

Given a tax rate of 40% and that the machine has zero salvage value for tax and financial reporting purposes, the deferred tax asset or liability on December 31, 2009, is *closest to*:

A. $158,400.
B. $50,000.
C. $298,400.

Answer: A

Depreciation expense for accounting purposes = 2,500,000 × 10% = $250,000
Depreciation expense for tax purposes = 2,500,000 × 15% = $375,000

Carrying amount on December 31, 2008 = 2,500,000 − 250,000 = $2,250,000
Tax base on December 31, 2008 = 2,500,000 − 375,000 = $2,125,000

Revaluation = 2,600,000 – 2,250,000 = $350,000

Carrying amount on December 31, 2009 = 2,600,000 − (2,600,000 / 25) = 2,496,000
Tax base on December 31, 2009 = 2,125,000 – 375,000 = $1,750,000

Reduction in revaluation surplus = 350,000 × 40% = $140,000

Deferred tax liability = [(2,496,000 − 1,750,000) × 40%] − 140,000 = $158,400

62. An analyst gathers the following information about a company:

Inventory turnover	14 times
Receivables turnover	18 times

If the company's net operating cycle equals 15 days, the company's number of days of payables is *closest to*:

A. 31 days.
B. 21 days.
C. 46 days.

Answer: A

NOC = DOH + DSO − No. of days of payables
15 = 365 / 14 + 365 / 18 – x

x = 31.35

63. In common-size income statements, which of the following items is *least likely* always expressed as a percentage of sales?

A. Income taxes
B. Depreciation
C. Interest expense

Answer: A

Income taxes are most likely to be presented as a percentage of pretax income.

64. The average market price of a company's stock over the year was \$40 and the price at the end of the year was \$50. The company's capital structure included:

- Warrants on 10,000 ordinary shares with an exercise price of \$35.
- Options on 20,000 ordinary shares with an exercise price of \$30.

The number of inferred shares that will be used in the computation of diluted EPS is *closest to*:

A. 6,250.
B. 19,000.
C. 11,000.

Answer: A

The warrants and options are dilutive, as their exercise prices are lower than the average market price of the company's stock over the year.

Proceeds to company from exercise of warrants = $\$35 \times 10{,}000 = \$350{,}000$
Number of shares repurchased at average market price = $\$350{,}000/40 = 8{,}750$
Net increase in number of shares outstanding = $10{,}000 - 8{,}750 = 1{,}250$

Proceeds to company from exercise of options = $\$30 \times 20{,}000 = \$600{,}000$
Number of shares repurchased at average market price = $\$600{,}000/40 = 15{,}000$
Net increase in number of shares outstanding = $20{,}000 - 15{,}000 = 5{,}000$

$1{,}250 + 5{,}000 = 6{,}250$

65. Unearned revenue is *most likely* classified as:

A. Owner's equity.
B. Liability.
C. Asset.

Answer: B

Unearned revenue arises when a company receives cash before providing the service. It is classified as a liability.

66. Which of the following is *least likely* a characteristic of an effective financial reporting framework?

A. Comparability
B. Comprehensiveness
C. Transparency

Answer: A

The characteristics of an effective financial reporting framework are transparency, comprehensiveness, and consistency. Comparability is one of the four supplementary qualitative characteristics of financial statements.

67. Under IFRS, which of the following is *most likely* when the outcome of a long-term project cannot be measured reliably?

A. The percentage of completion method is used.
B. The completed contract method is used.
C. Revenues are recognized to the extent of costs incurred during the period.

Answer: C

Under IFRS, if the outcome of the project cannot be measured reliably, revenues are recognized to the extent of costs incurred during the period.

68. Which of the following ratios is *most likely* lower in the early years of an asset's life if the company uses the straight-line method instead of the double declining balance method for depreciation?

A. Operating profit margin
B. Operating return on assets
C. Asset turnover

Answer: C

If a company uses straight line depreciation, it will report:

- Lower asset turnover (due to higher net assets).
- Higher operating profit margin (due to lower depreciation expense).
- Higher operating ROA (due to lower depreciation expense).

Questions 69–78 relate to Corporate Finance

69. Introduction of a new model causes a decline in sales of a car manufacturer's older models. This is *most likely* an example of:

    A. An externality.
    B. A sunk cost.
    C. An opportunity cost.

    Answer: A

    Cannibalization of sales is an example of a negative externality.

70. The NPV profile of Project A is steeper than that of Project B. Which of the following is *most likely* that the crossover point occurs at an NPV of $5,000?

    A. Project B has higher total cash inflows.
    B. Project A receives most of its cash flows later in its life.
    C. Project A has a higher IRR.

    Answer: B

    The steeper NPV profile indicates that:

    - Project A has higher total expected cash flows (higher y-intercept).
    - More of Project A's cash flows come later in its life.
    - Project A has a lower IRR (lower x-intercept).

71. A drag on liquidity is *most likely* to occur when:

    A. There is a delay in cash coming into the company.
    B. Cash leaves the company too quickly.
    C. The company loses creditworthiness.

    Answer: A

    A drag on liquidity is *most likely* to occur when there is a delay in cash coming into the company.

72. Consider the following statements:

Statement 1: Dual-class share structures can easily be changed over time.

Statement 2: Activist investors tend to have little impact on the company's long-term investors.

Which of the following is *most likely*?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are incorrect.

Answer: C

Dual-share systems are virtually impossible to dismantle once they are in place.

It is very important for long-term investors to consider how activist investors affect the company, as they can materially change a company's strategic direction.

73. A project's beta is *least likely* to be exposed to:

A. Business risk.
B. Financial risk.
C. Default risk.

Answer: C

Default risk is a consideration when investing in a bond. It has nothing to do with the risk associated with investing in a particular project.

74. ABC Company currently has a debt-to-equity ratio of 0.3. Its target debt-to-equity ratio is 0.4. The risk-free rate is 6%, and expected equity market return is 12%. ABC is considering a project that has a beta of 1.2. Given that the company's after-tax cost of debt is 7%, and the applicable tax rate is 40%, the WACC that should be used in evaluating this project is *closest* to:

A. 10.63%.
B. 11.43%.
C. 11.77%.

Answer: B

Cost of equity = $0.06 + 1.2\ (0.12 - 0.06) = 13.2\%$

Using component weights in the target capital structure:
WACC = $[0.132 \times (1/1.4)] + [0.07 \times (0.4/1.4)] = 11.43\%$

75. An analyst gathered the following information about a company:

Credit sales	$30,000
Cost of goods sold	$17,000
Accounts receivable	$4,000
Closing inventory	$2,750
Accounts payable	$2,000
Purchases	$12,000

The operating cycle for the company is *closest* to:

A. 47 days.
B. 169 days.
C. 108 days.

Answer: C

Number of days of inventory = 2,750 / (17,000/365) = 59.04 days
Number of days of receivables = 4,000 / (30,000/365) = 48.67 days
Operating cycle = 59.04 + 48.67 = 107.7 days

76. Williams Inc. borrows $1.5m for a month through a banker's acceptance. The company is offered an all-inclusive rate of 9%. Its effective borrowing cost is *closest* to:

A. 9.00%.
B. 9.23%.
C. 9.07%.

Answer: C

$$\text{Cost} = \frac{(0.09 \times 1{,}500{,}000 \times 1/12)}{1{,}500{,}000 - (0.09 \times 1{,}500{,}000 \times 1/12)} \times 12 = 9.07\%$$

77. Aztec Ltd. is considering investing $650 million in a new project. The CFO of the company tells the directors that the present value of the net cash flows that will be generated from the project will be around $800 million. The company has 7 million shares outstanding with a market price of $120 each. The price of the company's shares if it undertakes the new project will be *closest to*:

A. $114.29.
B. $135.72.
C. $141.43.

Answer: C

Net present value of the project = 800 – 650 = $150 million
Current market value of the company = 7 × 120 = $840 million
Market value of the company if it undertakes the project = 840 + 150 = $990 million
New share price = 990 / 7 = $141.43

78. Which of the following approaches is *least likely* to be used in determining a company's cost of debt?

A. Yield to maturity approach
B. Pure-play approach
C. Debt rating approach

Answer: B

The pure-play method is used to estimate the beta of a project, which is then used to determine the cost of equity.

Questions 79–90 relate to Equity

79. Which of the following is *least likely* an order matching rule used in a pure auction market?

    A. Time precedence
    B. Size precedence
    C. Display precedence

    Answer: B

    Order matching rules in a pure auction market may be based on price, display, or time precedence.

80. Which of the following types of market indices has a contrarian effect on portfolio weights?

    A. Fundamental weighting
    B. Price weighting
    C. Market value weighting

    Answer: A

    Fundamental weighting leads to a contrarian effect in that portfolio weights move away from securities whose prices have risen (as higher prices result in a lower earnings yield). Market value weighting results in the weight of a security in the index heading in the same direction as its price (momentum effect).

81. A corporate insider is consistently able to earn abnormal returns. This fact *most likely*:

    A. Supports the case for weak-form efficiency of markets.
    B. Weakens the case for strong-form efficiency of markets.
    C. Weakens the case for semi-strong-form efficiency of markets.

    Answer: B

    If any group of investors has access to private information that can result in abnormal returns, the market is not strong-form efficient.

82. An analyst gathered the following information regarding an equity market index. The index was created on January 1, 2009 at which time its value was set to 1,000. It consists of the following 3 securities:

Securities	**Price at December 31 2009 ($)**	**Price at December 31 2010 ($)**	**Dividends paid per share ($)**	**Weight in the index (%)**
A.	35	31	3	25
B.	48	45	2	35
C.	27	32	2	40

Given that dividends are paid at the end of the year and that the price return on the index for 2009 was 8.25%, the value of the price return index at the end of 2010 is *closest to*:

A. 1,083.
B. 1,108.
C. 1,179.

Answer: B

Price return on security A = (31 − 35) / 35 = –11.43%

Price return on security B = (45 − 48) / 48 = –6.25%

Price return on security C = (32 − 27) / 27 = 18.52%

Price return on the index for 2010:

$= (-0.1143 \times 0.25) + (-0.0625 \times 0.35) + (0.1852 \times 0.4) = 2.36\%$

Therefore, value of the price return index at the end of 2010:

$= 1{,}000 \times 1.0825 \times 1.0236 = 1{,}108.047$

83. A well-functioning securities market is *least likely* to:

A. Have low transaction costs.
B. Offer timely and accurate information on trading prices and volumes.
C. Be relatively illiquid.

Answer: C

A well-functioning securities market is likely to be relatively liquid.

84. A limit sell order placed above the best offer is *most likely*:

A. Referred to as a marketable sell limit order.
B. Referred to as behind the market.
C. Said to have created a new market.

Answer: B

A limit sell order placed above the best offer is referred to as behind the market and will not be executed unless the market price increases.

A limit order placed below the best bid would be a marketable sell limit order.

A limit sell order placed above the best bid but below the best offer would have created a new market.

85. Given that an equal-weighted index and a market-capitalization-weighted index consist of the same securities, underperformance by small-cap stocks will *most likely* result in the market-capitalization-weighted index exhibiting:

A. A greater price return than the equal-weighted index.
B. The same price return as the equal-weighted index.
C. A lower price return than the equal-weighted index.

Answer: A

In an equal-weighted index, large-cap stocks are underrepresented and small-cap stocks are overrepresented compared to a market-capitalization-weighted index. Therefore, underperformance by small-cap stocks will not affect a market-capitalization-weighted index as much as it would an equal-weighted index, and lead to the market-capitalization-weighted index having a greater price return than the equal-weighted index.

86. Consider the following statements:

Statement 1: Apart from normal dividends, cumulative preference shares are entitled to additional dividends if the company's profits exceed a pre-specified level.

Statement 2: From the investor's perspective, callable common shares are more risky than putable common shares.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.
B. Only Statement 2 is incorrect.
C. Both statements are correct.

Answer: A

Participating preference shares are entitled to additional dividends if the company's profits exceed a pre-specified level.

Callable common shares limit the investor's upside potential, while putable common shares protect the investor on the downside.

87. ABC Company's dividend growth rate is expected to be 20% for the next three years. After three years, the company's dividend growth rate will stabilize at 7%. ABC's last dividend payment was $4 per share. Given that its cost of equity is 12%, the current value of ABC's stock is *closest to*:

A. $119.08.
B. $107.80.
C. $147.92.

Answer: A

D_1 = 4 (1.2) = $4.8
D_2 = 4.8 (1.2) = $5.76
D_3 = 5.76 (1.2) = $6.91
D_4 = 6.91 (1.07) = $7.4

Terminal stock price at the end of Year 3 = 7.4 / (0.12 – 0.07) = $147.92

Current stock price = 4.8 / 1.12 + 5.76 / $(1.12)^2$ + 6.91 / $(1.12)^3$ + 147.92 / $(1.12)^3$ = $119.08

88. Companies in industries with low barriers to entry and a large number of customers *most likely* have:

	Bargaining power of customers	Threat of new entrants
A.	High	Low
B.	Low	High
C.	High	High

Answer: B

Industries with low barriers to entry carry a less significant threat of entry of new competitors. Customers in industries with a large number of customers typically have low bargaining power.

89. Emanuel purchases 130 shares of Hilton Pharmaceuticals on margin for $45 per share. She sells her shares after one year for $52 per share. The following information is also available:

Dividend received on the stock = $0.5 per share
Commission paid = $0.15 per share
Leverage ratio = 2.5
Call money rate = 6.5%
Government bill rate = 6%

The total return on Emanuel's investment is *closest to*:

A. 30.00%.
B. 15.56%.
C. 24.62%.

Answer: A

Total purchase price = 130 × 45 = $5,850

Proportion of equity investment = 1 / 2.5 = 40%

Equity investment = 1/2.5 × 5,850 = $2,340

Therefore, amount borrowed = 5,850 − 2,340 = $3,510

Commission paid on purchase transaction = 130 × 0.15 = $19.5

Total investment = 2,340 + 19.5 = $2,359.5

Equity remaining after the sale is calculated as follows:

Proceeds on sale (130 × 52)	6,760
Payoff loan	–3,510
Margin interest paid (3,510 × 6.5%)	–228.15
Dividends received (130 × 0.5)	65
Sales commission paid (130 × 0.15)	–19.5
Remaining equity	3,067.35

Therefore, total return = (3,067.35 − 2,359.5) / 2,359.5 = 30%

90. Which of the following is *least likely* regarding the stages of an industry life cycle?

	Growth	**Competition**	**Demand**
A. Embryonic	Slow	Non-existent	Low
B. Decline	Negative	High	Falling
C. Growth	High	High	Increasing

Answer: C

In the growth phase, competition between firms tends to be relatively low as the overall market size expands at a rapid pace.

Questions 91–104 relate to Fixed Income

91. Consider the following statements:

    Statement 1: Generally speaking, floating-rate notes have less interest rate risk than fixed-rate bonds.

    Statement 2: The spread on a floating-rate note varies with the issuer's creditworthiness during the term of the bond.

    Which of the following is *most likely*?

    A. Both statements are incorrect.
    B. Only Statement 1 is correct.
    C. Only Statement 2 is correct.

    Answer: B

    FRN's have lower interest rate risk than fixed-rate bonds because the coupon rate on a FRN is reset periodically and brought in line with market interest rates.
    The spread on a floating-rate note is determined at issuance based on the issuer's creditworthiness at issuance.

92. Consider the following statements:

    Statement 1: The option embedded in a putable bond is more likely to be exercised by the issuer when interest rates rise.

    Statement 2: If a bond is sold between coupon payment dates, accrued interest is due to the buyer.

    Which of the following is *most likely*?

    A. Both statements are incorrect.
    B. Only Statement 1 is correct.
    C. Only Statement 2 is correct.

    Answer: A

    The embedded option in a putable bond is likely to be exercised by the **investor** when interest rates rise.
    If a bond is traded between coupon payment dates, accrued interest is due to the **seller**.

93. Consider the following statements:

Statement 1: The drawback of credit-linked bonds is that they can contribute to further downgrades or eventual default of the issuer.

Statement 2: TIPS offer investors a fixed real return that is protected from inflation risk.

Which of the following is *most likely*?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are correct.

Answer: C

Becausea rating downgrade results in higher interest payments on credit-linked bonds, they can contribute to further downgrades or even an eventual default of the issuer.
Treasury Inflation Protection Securities are inflation-linked bonds. They are long-term assets with a fixed real return that is protected from inflation risk.

94. A 7% U.S. corporate bond is priced for settlement on May 18, 2015. The bond makes semiannual coupon payments on January 20 and July 20 of each year and matures on July 20, 2019. The bond uses the 30/360 day-count convention for accrued interest. Given that stated annual yield-to-maturity is 6.5%, the flat price of the bond per 100 of par value on May 18, 2015 is *closest* to:

A. \$101.7892.
B. \$103.7054.
C. \$104.0386.

Answer: A

Given the 30/360 day-count convention, there are 118 days between the last coupon on January 20, 2015, and the settlement date on May 28, 2015 (10 days between January 20 and January 30, plus 90 days for the full months of February, March, and April, plus 18 days in May). Therefore, the fraction of the coupon period that has gone by equals 118/180.

As of the last coupon payment date, there are 4.5 years (and nine semiannual periods) remaining until maturity.

Using stated annual yield-to-maturity of 6.5%, or 3.25% per semiannual period, the price of the bond as of the last coupon payment date is calculated as:

N = 9; PMT = –\$3.50; FV = –\$100; I/Y = 3.25%; CPT PV; PV = 101.924

The full price on May 18 is calculated as:

$PV^{Full} = 101.924 \times (1.0325)^{118/180} = \$104.0836$

The accrued interest is calculated as:

$AI = 118/180 \times 3.50 = \$2.2944$

The flat price is calculated as:

$PV^{Flat} = 104.0836 - 2.2944 = \mathbf{\$101.7892}$

95. Consider the following statements:

Statement 1: The coupon rate and principal amount on a capital-indexed bond increases with a specified index.

Statement 2: In a Bermuda-style call, the issuer has the right to call bonds on specified dates following the call protection period.

Which of the following is *most likely*?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are correct.

Answer: B

In a capital-indexed bond, a **fixed** coupon rate is applied to a principal amount that increases with a specified index, such that the coupon payment also rises with the index. Statement 2 is indeed correct.

96. Consider the following statements:

Statement 1: Given the term to maturity, a corporate bond cannot possibly offer a lower yield than a U.S. Treasury.

Statement 2: U.S. Treasures are free of credit risk, but not risk-free.

Which of the following is *most likely*?

A. Both statements are correct.
B. Only Statement 1 is correct.
C. Only Statement 2 is correct.

Answer: C

- Given the term to maturity, a putable corporate bond may actually offer a lower yield than a U.S. Treasury.
- Statement 2 is correct, as U.S. Treasures have an element of reinvestment risk among other risks.

97. Each of the option-free bonds listed below has a face value of $1,000:

	Bond 1	**Bond 2**
Time to maturity	10 years	10 years
Annual coupon rate	5.5%	8.5%
Yield to maturity today	6%	6%

If the yield to maturity for both the bonds remains constant over their remaining terms, over time there will *most likely* be an increase in the price of:

A. Bond 1 only.
B. Bond 2 only.
C. Both of the bonds.

Answer: A

- Bond 1 will be trading at a discount because its coupon rate is lower than the discount rate.
- Bond 2 will be trading at a premium because its coupon rate is greater than the discount rate.
- If yields remain constant until maturity, only Bond 1's price will increase as it converges to its par value.

98. Consider the following information regarding a convertible bond:

Par value = $1,000

Conversion ratio = 30:1

Convertible bond price = $1,020

Given that the conversion premium is $30, the current share price is *closest* to:

A. $30.00.
B. $32.33.
C. $33.00.

Answer: C

Given the convertible bond price of $1,020, a conversion premium of $30 implies that the conversion value is $990. Because the conversion ratio is 30:1, the current price per share will be $990/30 = $33.

99. A coupon-bearing bond was purchased at par. If the bond were held until maturity and interest rates fell during the period, the actual ex-post return would *most likely* be:

A. Lower than the YTM at time of purchase.
B. Higher than the YTM at time of purchase.
C. Equal to the YTM at time of purchase because the bond was held until maturity.

Answer: A

The fall in interest rates during the term of the bond leads to a lower yield on reinvestment of income than the YTM calculated upon purchase. Therefore, the actual return on the bond would be lower than the YTM.

100. The following information relates to two callable bonds of the same issuer that are currently callable.

Estimated Percentage Change in Price if Interest Rates Change by:

	–100 bps	**+100 bps**
Bond A	+4	–6
Bond B	+11	–8

Both the bonds have the same maturity and the yield curve for the issuer is flat. Which of the bonds is *most likely* the higher coupon bond?

A. Bond A
B. Bond B
C. Both bonds offer the same coupon rate.

Answer: A

- At current yields, Bond A exhibits negative duration, as the percentage price decrease from an increase in interest rates (–6%) is greater than the percentage price increase from a decrease in interest rates (4%). Given the current level of interest rates, Bond A must be the higher coupon bond as it is undergoing "price compression." Bond A is likely to be called, as its coupon rate is greater than market yields.
- Bond B exhibits positive convexity. It is not in danger of being called so its coupon rate must be lower than current market interest rates.

101. A bond is initially trading at a price of $98.725. If interest rates decrease by 25bp, its price is expected to rise to $99.875. On the other hand, if interest rates increase by 25bp, its price is expected to fall to $97.465. The bond's modified duration is *closest* to:

A. 2.36.
B. 4.88.
C. 5.12.

Answer: A

Modified duration = (99.875 – 97.465)/(2 × 98.725 × 0.0025) = **4.88**

102. Which of the following embedded options is *most likely* to favor an issuer of securities?

A. A conversion option
B. A doubling option
C. A floor on a floating-rate security

Answer: B

- A conversion option and a floor on a floating-rate security benefit the investor.
- A doubling option allows the issuer to repurchase double the required number of bonds under a sinking fund arrangement.

103. Which of the following is *least likely* an internal credit enhancement?

A. Overcollateralization
B. Senior/subordinate structure.
C. Monoline insurance.

Answer: C

Monoline insurance and other third-party financial guarantees are examples of external credit enhancements.

104. Consider the following statements:

Statement 1: Any coupon income received from a bond during the term of the repo belongs to the buyer.

Statement 2: The repo margin serves to protect the seller against a decline in the value of the collateral over the term of the repo.

Which of the following is *most likely*?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are incorrect.

Answer: C

Any coupon income received from a bond during the term of the repo belongs to the seller (borrower).

The repo margin serves to protect the buyer (lender) against a decline in the value of the collateral over the term of the repo.

Questions 105–110 relate to Derivatives

105. Which of the following factors *least likely* affects the spot price of an asset that entails no costs nor offers any benefits?

A. The time value of money.
B. The risk aversion of investors.
C. The price recently paid by other investors.

Answer: C

The price recently paid by other investors is past information. It has no impact on the spot price. The time value of money and the risk aversion of investors are reflected in the discount rate.

106. Susan wants to insure her portfolio against losses, while continuing to benefit from any appreciation in the value of her portfolio. She is *most likely* to pursue:

A. A protective put strategy.
B. A covered call strategy.
C. An interest rate collar.

Answer: A

A protective put strategy protects investors on the downside (as they are long on put options). They also continue to participate in the upside of the stock (as they continue to hold the underlying stock).

107. Which of the following is *least likely* an example of a forward commitment?

A. A call option
B. A futures contract
C. An interest-rate swap

Answer: A

An option is an example of a contingent claim. Forwards, futures, and swaps are examples of forward commitments.

108. In the futures market, if a trader receives a margin call, she must make a deposit in her margin account such that the balance in her account is at least equal to the:

A. Initial margin requirement.
B. Variation margin requirement.
C. Maintenance margin requirement.

Answer: A

In the futures market, the amount that must be deposited to satisfy a margin call should restore the initial margin requirement. Note that in the equity market, in a margin transaction, the amount that must be deposited to satisfy a margin call should restore the maintenance margin.

109. The underlying on an American call option is a stock that is currently trading at $65. The option has an exercise price of $60, it expires in three months, and the risk-free rate is 5%. The minimum value of this option is *closest to*:

A. $5.73.
B. $5.
C. $7.86.

Answer: A

Minimum value of American call = $65 - [60 / (1.05)^{3/12}] = \$5.73$

110. Henry sold a call option with an exercise price of $75 for $4. Henry's profit if the stock trades at $81 at option expiration is *closest to*:

A. $6 loss.
B. $10 profit.
C. $2 loss.

Answer: C

Call option writer's profit (loss) = payoff + premium = $75 - 81 + 4 = -\$2$

Questions 111–114 relate to Alternative Investments

111. Which of the following is *least likely* a source of return from a collateralized commodity futures position?

 A. Spot price return
 B. Collateral yield
 C. Storage costs

 Answer: C

 The sources of return from a collateralized commodities futures position are roll yield, collateral yield, and spot price return.

112. Jupiter Fund of Funds invests $250 million in each of two funds, Venus Hedge Fund and Mars Hedge Fund. Jupiter has a "2 and 10" fee structure. Both hedge funds charge a 2% management fee based on assets under management at the end of the year and a 20% incentive fee, which is calculated net of management fee. After one year, Jupiter's investments in Venus and Mars are valued at $230 million and $320 million respectively, after accounting for their respective management and incentive fees. The annual return to an investor in Jupiter, net of fees, at the fund of funds level is *closest* to:

 A. 6.80%.
 B. 20.00%.
 C. 2.63%.

 Answer: A

 End of year capital = $230m + $320m = $550 million
 Management fee = $550m × 2% = $11 million
 Incentive fee = ($550m − $500m) × 10% = $5 million

 Total fees = $11m + $5m = $16 million
 Investor's net return = ($550m − $500m − $16m) / $500m = 6.8%

113. Consider the following statements:

 Statement 1: The Sharpe ratio for commodities as an asset class has historically been higher than bonds but lower than stocks.

 Statement 2: The volatility of commodity prices tends to be higher than the volatility for reported consumer price inflation.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.
B. Only Statement 2 is incorrect.
C. Both statements are correct.

Answer: A

The Sharpe ratio for commodities as an asset class has historically been lower than for both stocks and bonds. Historically, commodities have earned a lower return than stocks and bonds, and have had a higher standard deviation than stocks and bonds.

114. Funds from operations (FFO) for a REIT are *most likely* calculated as:

A. Net income plus depreciation less gains from sales of real estate plus losses from sales of real estate.
B. Net income plus depreciation less capital expenditures.
C. Net income less gains from sales of real estate plus losses from sales of real estate.

Answer: A

FFO, in its most basic form, equals net income plus depreciation charges on real estate property less gains from sales of real estate property plus losses on sales of real estate property.

Questions 115–120 relate to Portfolio Management

115. Consider the following statements:

Statement 1: A portfolio on the minimum variance frontier may have a positive or negative weight on the risk-free asset.

Statement 2: An investor with a negative risk-aversion coefficient would have an indifference curve with a negative slope.

Which of the following is *most likely*?

A. Both statements are correct.
B. Only one statement is correct.
C. Both statements are incorrect.

Answer: B

Any portfolio on the minimum variance frontier only contains risky assets. The weight of the risk-free asset is zero.
A risk-averse investor has a negative risk aversion coefficient. Because utility increases with risk and return, the indifference curve for a risk-averse investor has a negative slope.

116. The correlation between two assets equals –0.296 and the covariance between the two assets is –0.0104. Which of the following *least likely* lists the standard deviations of the two assets?

A. 45.45% and 7.73%
B. 23.4% and 14.1%
C. 35.54% and 9.886%

Answer: B

The product of the two asset's standard deviations, x, is calculated as:

Correlation = Covariance / x
x = –0.0104/–0.296 = 0.0351

The product of 23.4% and 14.1% does not equal 0.0351.

117. Beta can be defined as:

A. The covariance of an asset with the market as a proportion of the market's standard deviation.
B. The covariance of an asset with the market as a proportion of the market's covariance with itself.
C. The correlation of an asset with the variance of the market.

Answer: B

Beta equals the covariance of an asset with the market as a proportion of the market's covariance with itself. The market's covariance with itself basically equals the market's variance.

118. Portfolio A has a higher total risk but lower total return than the market portfolio. Which of the following is *least likely*?

A. Portfolio A has a beta that is lower than 1.
B. Portfolio A has relatively high unsystematic risk.
C. Portfolio A cannot possibly lie on the SML.

Answer: C

The portfolio can lie on the SML if most of its total risk is unsystematic risk that can be diversified away. To plot on the SML, the portfolio must have a beta of less than 1, as its expected return is lower than that of the market portfolio.

119. Consider the following statements:

Statement 1: Unlike mutual funds, hedge funds do not face heavy disclosure requirements.

Statement 2: Mutual funds generally have a tax advantage over ETFs.

Which of the following is *most likely*?

A. Only Statement 2 is incorrect.
B. Both statements are correct.
C. Both statements are incorrect.

Answer: A

ETFs generally have a tax advantage over mutual funds.

120. An analyst gathered the following information regarding a stock:

Current market price = \$32
Expected dividend at year end = \$2
Expected price at year end = \$34
Beta = 0.8
Risk-free rate = 5%
Equity market risk premium = 8%

This stock is *most likely*:

A. Undervalued.
B. Overvalued.
C. Properly valued.

Answer: A

$$\text{Expected rate of return} = \frac{34 - 32 + 2}{32} = 12.5\%$$

Required rate of return = 0.05 + 0.8 (0.08) = 11.4%

Because the expected rate of return is greater than the required rate of return, the stock is undervalued.

Mock Exam 1 – Afternoon Session – Solutions

Questions 1–18 relate to Ethics

1. Elizabeth Yang, CFA, is an analyst at a new equity research advisory service. She often has to give presentations to potential clients about her firm. Which of the following statements that she makes at one such presentation *least likely* violates Standard I (C): Misrepresentation?

   A. "I would recommend investing most of the retirement funds in certificates of deposits whose principal is guaranteed up to a certain amount by the U.S. government."
   B. "Based on my CFA designation, I can guarantee you a good return on your investment."
   C. "You can rest assured that our firm is equipped to handle all your investment needs."

   Answer: A

   - The principal amount of certificates of deposits is indeed guaranteed up to a certain amount by the U.S. government.
   - Elizabeth cannot guarantee a good return based on her CFA designation.
   - She cannot say that her firm is equipped to handle **all** the investment requirements of her client, as her firm only provides equity research advisory services.

2. Which of the following *most likely* violates Standard III (A): Loyalty, Prudence and Care?

   A. An analyst placing her employer's interests ahead of her clients' interests
   B. An analyst placing her clients' interests ahead of her own
   C. An analyst placing the law above her clients' interests

   Answer: A

   - According to Standard III (A), an analyst should give paramount importance to her clients' interests. Their interests should be given priority above those of the member's employer.
   - If protecting clients' interests is in conflict with applicable law, the analyst may be required to place the law above her clients' interests.

3. Sara Johnson, CFA, overhears one of her co-workers advising his clients about a new investment recommendation that their firm is about to release. Which of the following actions *least likely* violates the CFA Institute Standards of Professional Conduct?

   A. She informs all her clients about the recommendation as well so that they receive fair treatment.
   B. She takes the matter to her supervisor.
   C. She does not do anything if the recommendation is immediately sent to all clients.

Answer: B

- Sara's coworker is in violation of Standard III (B): Fair Dealing, because he has informed his clients about the recommendation before any of the firm's other clients have had a chance to act on it.
- This violation should be brought to the attention of management so that appropriate action may be taken.

4. Raul Garcia, CFA, an investment manager, is in an advisory relationship with Beta Corporation. One day he receives a call from the local police, who require some information about Beta Corporation, as they suspect it to be involved in money laundering. Garcia gives them whatever information they required. At the time of the call, Garcia was sitting with his coworker, Henry, who overheard the conversation. After leaving Garcia's office, Henry immediately issued a sell recommendation for Beta Corporation to all his clients. Which of the following statements is *least accurate*?

   A. Henry violated Standard II (B): Market Manipulation.
   B. Garcia violated Standard III (E): Preservation of Confidentiality.
   C. Henry violated Standard II (A): Material, Non-public Information.

   Answer: A

   - Garcia violated Standard III (E), as he allowed confidential information about his client to reach a coworker.
   - Henry violated Standard II (A) by acting on material, non-public information.
   - Henry's actions did not result in manipulation of the market.

5. Amir Khan, CFA, is an investment manager at Invest Capital. His friend thinks that Alpha Corp's earnings growth rate will exceed expectations in the forthcoming quarter. Based on this information, Khan issues a buy recommendation on Alpha's stock. Which of the following standards has Khan *least likely* violated?

   A. Standard III (A): Loyalty, Prudence and Care
   B. Standard II (B): Market Manipulation
   C. Standard V (A): Diligence and Reasonable Basis

   Answer: B

   - Khan has not exercised reasonable care and prudent judgment in issuing the recommendation. Therefore, he has violated Standard III (A).
   - His recommendation is only based on his friend's opinion. Therefore, he has violated Standard V (A).

6. Martha Graham, CFA, is a portfolio manager. She is very bullish on the stock of ABC Ltd. She adds the stock to all portfolios under her management such that the stock comprises 10% of each portfolio. Graham is *most likely* in violation of:

   A. Standard V (B): Communication with Clients and Prospective Clients.
   B. Standard III (C): Suitability.
   C. No particular standard.

   Answer: B

   Graham purchases the stock for all her clients without thinking about the suitability of the investment for each individual client's portfolio.

7. Alicia Jones, CFA, believes that a recent technological breakthrough made by Green Technologies will boost its earnings in the future. She calls some of her clients who she thinks should add the stock to their portfolios and encourages them to invest a certain percentage of their equity portfolios in the company's stock. Jones is *most likely* in violation of:

   A. Standard III (B): Fair Dealing.
   B. Standard VI (B): Priority of Transactions.
   C. Neither of the above.

   Answer: C

   Jones did not violate any standard, as she genuinely believed that the investment may offer good returns, and she only called those clients whom she thought the investment was suitable for.

8. Jim Young, CFA, resides in the Republic of Spartica, but frequently does business in Glaburland, with a client who also happens to be a citizen of Spartica. Spartica laws apply, and they state that laws of the client's home country govern. Spartica's laws are more strict than the Code and Standards, while Glaburland's laws are less strict than the Code and Standards. Young is *most likely* required to adhere to:

   A. The laws of Spartica.
   B. The Code and Standards.
   C. The laws of Glaburland.

   Answer: A

   Because applicable law (Spartica's law) states that the law of the client's home country governs (which is more strict than the Code and Standards) Young must adhere to the laws of Spartica.

9. To comply with Standard III (B): Fair Dealing, an investment manager is *least likely* required to:

   A. Treat all clients equally when disseminating investment recommendations.
   B. Disclose different levels of services to all clients and prospective clients.
   C. Communicate material changes in investment advice to all current clients, not just those who the member knows have acted on the earlier advice.

   Answer: A

   All clients cannot be treated equally because it is not possible for members to reach all clients at the same time.

10. Smith Rivers, CFA, manages the portfolio of Alan Chou. Alan has retired and relies on his investment portfolio exclusively to provide income every year to meet living expenses. Alan places an order with Smith to invest half his portfolio in a very risky biotech company. Which of the following should Smith *least likely* do?

    A. Refrain from making the trade
    B. Seek an affirmative statement from Alan that suitability is not a consideration in making the trade
    C. Go ahead and make the trade

    Answer: C

    According to Standard III (C): Suitability, members who are in an advisory relationship with a client must conduct a suitability analysis prior to making a recommendation or taking investment action. In case of unsolicited trade requests that a member knows are unsuitable for the client, the member should refrain from making the trade or seek an affirmative statement from the client that suitability is not a consideration.

11. Spencer O'Connor, CFA, manages large-cap portfolios for high-net-worth individuals. O'Connor forecasts that large-cap stocks will underperform over the next year, so he shifts half of his clients' assets into small-cap stocks that he believes are undervalued and will continue to perform well going forward. He informs all his clients about the change in their portfolios' asset allocations after making the trades. O'Connor has *most likely*:

    A. Not violated any standard.
    B. Violated Standard III (C): Suitability.
    C. Violated Standard III (B): Fair Dealing.

    Answer: B

    In cases where members are responsible for managing a fund or portfolio to an index or an expected mandate, it is their responsibility to invest in assets that are consistent with the given mandate.

12. Once a supervisor learns that an employee under his supervision has violated the law or the CFA Institute Standards of Professional Conduct, his first step must be to:

    A. Warn the employee to cease the activity and report the misconduct up the chain of command.
    B. Initiate an investigation to ascertain the extent of the wrongdoing.
    C. Take steps to ensure that the violation will not be repeated.

    Answer: B

    Once any violation is detected, a supervisor must immediately launch an investigation to determine the extent of the wrongdoing.

13. Which of the following statements *most likely* violates Standard VII (B): Reference to CFA Institute, the CFA Designation and the CFA Program?

    A. "As a CFA Charterholder, I am most qualified to manage client investments."
    B. "I passed all three CFA exams in three consecutive years."
    C. "As a CFA candidate, I am committed to the highest ethical standards."

    Answer: A

    According to Standard VII (B), an analyst must not overpromise his competency based on the CFA Charter.

14. Under the mosaic theory an analyst can *most likely* use:

    A. Material public information and non-material, non-public information.
    B. Material non-public information.
    C. Public information only.

    Answer: A

    According to Standard II (A): Material, Non-public Information, an analyst may use material public information as well as non-material, non-public information in her analysis.

15. Which of the following is *least likely* allowed to claim compliance with GIPS?

    A. Pension plan sponsors
    B. Asset management firms
    C. Mutual fund management companies

    Answer: A

    According to the GIPS Standards, any investment management firm that actually manages assets can claim compliance with GIPS. Plan sponsors cannot claim compliance unless they actually manage assets.

16. Which of the following is *least likely* one of the eight major sections of the GIPS Standards?

    A. Fundamentals of compliance
    B. Output data
    C. Calculation methodology

    Answer: B

    Output data is not one of the major sections of the GIPS Standards.

17. A team of analysts of Brookfront Inc. issues an under perform rating for an emerging clothing company, Fashion Fabrics. Justine, a member of the team, does not support the recommendation. Based on her own research, she believes that the company is a good long-term investment.

    In order to comply with Standard V (A): Diligence and Reasonable Basis, Justine should *most likely*:

    A. Dissociate with the group immediately.
    B. Let her name be included in the report with a documentation of her difference of opinion.
    C. Let her name be included in the report and change her personal recommendation on the company.

    Answer: B

    According to Standard V (A), members may be part of a group or team that is collectively responsible for producing investment analysis or research. The conclusions or recommendations of the report represent the consensus of the group and are not necessarily the views of the member, even though the name of the member is included on the report. In such a case, if the member is confident in the process, she does not have to dissociate from the report if it does not reflect her opinion. She should, however, document her difference of opinion with the team.

18. Which of the following is *least likely* to be disclosed to clients according to CFA Institute Standards of Professional Conduct?

   A. Directorship in another company
   B. Holding shares in companies that the client also owns shares in
   C. Duty to adhere to CFA Institute Code and Standards

   Answer: C

   CFA Institute Standards of Professional Conduct do not require explicit disclosure by members and candidates about their being bound by the Code and Standards.

Questions 19–32 relate to Quantitative Methods

19. Given that the observations in a data set do not have the same value, the relationship among the arithmetic mean, harmonic mean, and geometric mean of the data set is *most likely*:

    A. Harmonic mean < geometric mean < arithmetic mean.
    B. Geometric mean < harmonic mean < arithmetic mean.
    C. Harmonic mean < arithmetic mean < geometric mean.

    Answer: A

    When observations in the data set do not all have the same value, the harmonic mean is lower than the geometric mean, which itself is lower than the arithmetic mean.

20. A distribution is characterized by large infrequent losses and small frequent gains. Which of the following is *most likely*?

    A. The distribution is negatively skewed, and its mean is lower than its median.
    B. The distribution is positively skewed, and its median is lower than its mode.
    C. The distribution is negatively skewed, and its median is greater than its mode.

    Answer: A

    The tail of the distribution is elongated on the lower or the left side, so it is a negatively skewed distribution. For such distributions, the mean is lower than the median, which itself is less than the mode.

21. An analyst states that the probability that the economy will continue to expand in the coming year is 25%. Further, she anticipates that the probability of the Fed increasing interest rates is 50%. The joint probability that the economy will continue to expand and the Fed will increase interest rates is 35%. Given this information, the probability that the Fed will increase interest rates or that the economy will continue to expand is *closest to*:

    A. 60%.
    B. 75%.
    C. 40%.

    Answer: C

    P(A or B) = P(A) + P(B) – P(AB)
    P(Fed will raise interest rates OR economy will expand) = 0.50 + 0.25 – 0.35 = 0.40

22. Consider the following statements:

Statement 1: The continuously compounded stated annual rate is always lower than the effective annual rate.

Statement 2: A stock with a holding period return of 25% over two years offers a continuously compounded return of 11.16%.

Which of the following is *most likely*?

A. Both statements are correct.
B. Only Statement 1 is correct.
C. Only Statement 2 is correct.

Answer: A

- The continuously compounded stated annual rate (r_{cc}) is always lower than the effective annual rate (EAR). $r_{cc} = \ln(EAR + 1)$
- $0.25 = e^{rcc \times 2} - 1$
  $r_{cc} = [\ln(0.25 + 1)] / 2 = 11.16\%$

23. Which of the following is *least likely* a desirable characteristic of an estimator?

A. Unbiasedness
B. Efficiency
C. Continuity

Answer: C

The desirable characteristics of an estimator are unbiasedness, efficiency, and consistency.

24. Which of the following is *most likely* regarding the statistics that can be used to study a population mean when the sample size is less than 30 and the population is not normally distributed?

	t-stat	**z-stat**
A.	Yes	Yes
B.	No	Yes
C.	No	No

Answer: C

When the sample size is small and the population is not normally distributed, neither the t-stat nor the z-stat can be used.

25. For a two-tailed hypothesis test, the p-value is given as 0.04. At the 5% level of significance, the null hypothesis will *most likely* be:

A. Rejected.
B. Not rejected.
C. Accepted.

Answer: A

- The p-value is the lowest level of significance at which the null hypothesis can be rejected. At the 5% significance level the null hypothesis will be rejected, as the significance level of the test is greater than the p-value (4%).
- We can only reject or fail to reject the null hypothesis in a hypothesis test. The null is never "accepted."

26. An analyst can *most likely* compute the correlation between two random variables by:

A. Dividing the covariance between the two variables by the product of their variances.
B. Multiplying the covariance between the two variables by the product of their standard deviations.
C. Dividing the covariance between the two variables by the product of their standard deviations.

Answer: C

Correlation (X,Y) = Covariance (X,Y) / (Std. dev A × Std. dev B)

27. An analyst gathered the following information for a stock:

Year	Return
1	8.5%
2	5.6%
3	–3.2%
4	4.5%

The mean absolute deviation of the stock's returns is *closest to*:

A. 3.53%.
B. 0%.
C. 3.85%.

Answer: A

Mean return = (8.5 + 5.6 − 3.2 + 4.5) / 4 = 3.85%

$$\text{MAD} = \frac{|8.5-3.85| + |5.6-3.85| + |-3.2-3.85| + |4.5-3.85|}{4} = 3.53\%$$

28. An investor purchases a T-bill for \$940 when its money market yield is 6.2% and there are 120 days left to maturity. The HPY and EAY for the T-bill are *closest to*:

	HPY	**EAY**
A.	2.07%	6.42%
B.	2.7%	6.42%
C.	2.07%	6.7%

Answer: A

HPY = 6.2 × 120/360 = 2.07%

EAY = $(1 + 0.0207)^{365/120} - 1$ = 6.42%

29. The probability that it will rain on any given day in the month of June (30 days) is 0.3. The expected value and standard deviation of the number of rainy days in June are *closest to*:

	Expected Value	**Standard Deviation**
A.	9	6.3
B.	9	2.51
C.	21	6.3

Answer: B

Using the binomial distribution:

Expected Value = 30 × 0.3 = 9

Standard Deviation = $(30 \times 0.3 \times 0.7)^{0.5}$ = 2.51

30. An analyst estimates that the monthly mean return on a sample of 50 U.S. stocks is 6% with a variance of 72.25. The standard error of the sample mean is *closest to*:

A. 10.22.
B. 1.42.
C. 1.20.

Answer: C

Standard error = $(72.25)^{05} / (50)^{0.5}$ = 1.2

31. The tax authorities of Probalina will soon be making an announcement regarding the corporate tax rate for the next year. The corporate tax rate currently stands at 10%. There is a 0.4 chance that the tax rate will remain unchanged, a 0.15 probability that it will be raised to 20%, and a 0.45 chance that Probalina will be made a tax-free zone. The development projects in Probalina require a large investment. The probability of the country's investment requirements being met are as follows:

- If the tax rate is 0%, the probability of investment requirements being met = 0.9.
- If the tax rate is 10%, the probability of investment requirements being met = 0.5.
- If the tax rate is 20%, probability of investment requirements being met = 0.2.

The probability of there not being enough funds to meet Probalina's investment requirements given that the tax rate remains unchanged is *closest to*:

A. 0.2.
B. 0.5.
C. 0.9.

Answer: B

If tax rates remain unchanged at 10%, there is a 0.5 chance that the investment requirements will be met. Therefore, the probability of their not being met equals 1– 0.5 = 0.5 or 50%.

32. If the probability of success in a binomial experiment is 0.75, the binomial distribution would most likely be:

A. Symmetric.
B. Right-skewed.
C. Left-skewed.

Answer: C

If the probability of success in a binomial experiment is greater than 0.5, the binomial distribution would be left-skewed (i.e., have a long tail on the left).

Questions 33–44 relate to Economics

33. Consider the following statements:

    Statement 1: All inferior goods are Giffen goods, but not all Giffen goods are inferior goods.

    Statement 2: Veblen goods and Giffen goods both have upward-sloping demand curves.

    Which of the following is *most likely*?

    A. Both statements are correct.
    B. Only one statement is correct.
    C. Both statements are incorrect.

    Answer: B

    Statement 1 is incorrect. All Giffen goods are inferior goods (as the income effect of a price reduction is negative), but not all inferior goods are Giffen goods (as the income effect for inferior goods does not necessarily outweigh the substitution effect).

    Statement 2 is correct. Both Veblen goods and Giffen goods exhibit a positive relationship between own-price and quantity demanded.

34. Schumpeter's "creative destruction" process *most likely* asserts that:

    A. Perfectly competitive markets mainly exist in the long run.
    B. Monopolies can earn economic profits in the long run.
    C. The demand curve facing an oligopoly will kink at the current market price.

    Answer: A

    Joseph Schumpeter suggested that perfect competition is more of a long-run type of market structure. In the short run, companies may develop new products or processes that give them an edge over competitors, but in the long run, other firms follow the innovative company and try to copy its idea.

35. In which of the following types of price discrimination does the monopolist use the quantity purchased by a consumer to determine how much she values the product?

A. First-degree price discrimination
B. Second-degree price discrimination
C. Third-degree price discrimination

Answer: B

- In first degree price discrimination, the monopolist charges each consumer the highest price she is willing and able to pay.
- In second-degree price discrimination, the monopolist offers a variety of quantity-based pricing options that induce customers to self-select based on how highly they value the product (e.g., volume discounts, product bundling).
- Third-degree price discrimination can occur when customers can be separated by geographical or other traits. One set of customers is charged a higher price while the other is charged a lower price (e.g., airlines charge higher fares on one-day, round-trip tickets, as they are more likely to be purchased by businesspeople).

36. A firm in perfect competition will continue to operate in the short run as long as:

A. Price exceeds average total cost.
B. Price exceeds average variable cost.
C. Price exceeds average fixed cost.

Answer: B

In the short run, a firm in perfect competition will continue to produce as long as price exceeds AVC, as this would mean that it is covering at least a portion of its fixed costs.

37. Which of the following *most likely* represents the effects of an increase in the price level?

	IS Curve	LM Curve	AD Curve
A.	Unchanged	Shifts to the left	Unchanged
B.	Shifts to the left	Unchanged	Shifts to the left
C.	Unchanged	Shifts to the left	Shifts to the right

Answer: A

- A change in prices has no impact on the IS curve.
- An increase in the price level decreases real money supply, so income has to fall so that real money demand also falls and keeps the money market in equilibrium. Therefore, the LM curve shifts to the left.
- There is a movement along the AD curve (no shift).

38. Which of the following *most likely* represents the causes of an increase in aggregate demand?

	Taxes	Bank Reserves	Indirect Exchange Rate
A.	Decrease	Increase	Decrease
B.	Decrease	Decrease	Increase
C.	Increase	Increase	Decrease

Answer: A

- A decrease in taxes increases disposable income and consumption.
- An increase in bank reserves increases money supply, reduces interest rates, and increases consumption and investment.
- A decrease (depreciation) in the indirect exchange rate (FC/DC) results in higher exports and lower imports.

39. A situation in which injections of money into the economy fail to reduce interest rates or influence real economy activity is known as:

A. Money neutrality.
B. Liquidity trap.
C. Quantitative easing.

Answer: B

- Money neutrality states that money supply and/or the money growth rate will not affect the real interest rate, but will influence inflationary expectations.
- Quantitative easing is basically an expansionary open market operation conducted on a much larger scale in the hope of stimulating the economy.
- A liquidity trap is a situation where an interest rate cut (to counter deflation in the economy) fails to lower savings and stimulate consumption.

40. Unemployment benefits are examples of:

A. Automatic stabilizers.
B. Discretionary fiscal actions.
C. Quantitative easing.

Answer: A

Unemployment benefits are examples of needs-tested spending, which is an automatic stabilizer embedded in fiscal policy.

41. Which of the following models of international trade asserts that differences in factor endowments are the primary source of comparative advantage?

A. Ricardian model
B. Heckscher-Ohlin model
C. Fischer model

Answer: B

- The Ricardian model asserts that differences in technology are the key source of comparative advantage.
- The Heckscher-Ohlin model asserts that differences in factor endowments are the primary source of comparative advantage.
- The Fisher effect is directly related to the concept of money neutrality. It states that the real rate of interest in an economy is stable over time so that changes in nominal interest rates are the result of changes in expected inflation.

42. Which of the following combinations of changes in the nominal exchange rate, foreign inflation, and domestic inflation will result in a decrease in the real exchange rate (in terms of DC/FC)?

	Nominal Exchange Rate	**Foreign Inflation**	**Domestic Inflation**
A.	Decrease	Decrease	Increase
B.	Increase	Increase	Decrease
C.	Decrease	Increase	Decrease

Answer: A

The real exchange rate is positively related to the nominal exchange rate and foreign inflation, but negatively related to domestic inflation.

43. A trader is quoted the following exchange rates:

	Spot Rate	Expected Spot Rate in One Year
USD:JPY	77.68	77.50
GBP:USD	1.5682	1.5548
EUR:USD	1.3754	1.3644

Which of the following correctly lists the currencies from strongest to weakest based on their performance over the next year?

A. JPY, USD, GBP, EUR
B. USD, JPY, EUR, GBP
C. JPY, USD, EUR, GBP

Answer: C

Based on the information given, the EUR:USD exchange rate is expected to decline from 1.3754 to 1.3644. This means that EUR is expected to depreciate versus USD.

Further, the GBP:USD exchange rate is expected to decline from 1.5682 to 1.5548. This means that GBP is also expected to depreciate versus USD.

Therefore, we can say that **USD is expected to strengthen against both EUR and GBP**.

In order to determine which currency is stronger between EUR and GBP, we will need to calculate the spot EUR:GBP cross-rate as well as the expected EUR-GBP cross-rate in one year.

Current EUR-GBP spot rate = $1.3754 \times (1.5682)^{-1} = 0.8771$
Expected EUR-GBP spot rate in one year = $1.3644 \times (1.5548)^{-1} = 0.8775$

The EUR:GBP exchange rate is expected to increase from 0.8771 to 0.8775. This means **that EUR is expected to appreciate against GBP**.

The USD:JPY exchange rate is expected to decline from 77.68 to 77.50, which means that USD is expected to depreciate against JPY.

Therefore, the list of currencies from strongest to weakest based on their performance over the next year is:

JPY, USD, EUR, GBP

44. The quality bias that arises when a Laspeyres index is used to calculate inflation can *most likely* be mitigated by:

A. Using hedonic pricing.
B. Introducing new products in the basket more regularly.
C. Using a Fischer index.

Answer: A

- Hedonic pricing refers to the practice of adjusting prices for quality improvements.
- The substitution bias can be mitigated by using chained price index formulas like the Fischer index.
- Introducing new products into the basket more regularly deals with the new product bias.

Questions 45–68 relate to Financial Reporting and Analysis

Assume IFRS unless otherwise stated.

45. Ratios are an output of which step of the financial statement analysis framework?

    A. Process data
    B. Collect input data
    C. Analyze/interpret the processed data

    Answer: A

    Ratios are an output of the "process data" step and an input for the "analyze/interpret the processed data" step in the financial statement analysis framework.

46. Which of the following *most likely* contributes toward faithful representation of financial statements?

    A. Neutrality
    B. Materiality
    C. Understandability

    Answer: A

    Faithful representation requires that information should be complete, neutral, and free from error.

    Materiality is an aspect of relevance.

    Understandability is one of the four supplementary qualitative characteristics of financial statements.

47. During 2009, Quintus Inc. sold a piece of land to Solonius Inc. for $10,000,000. Quintus received $4,000,000 during 2009, and will receive the remaining amount the following year. It purchased this piece of land for $3,000,000 in 1999. The profit that Quintus will report in 2009 is *closest to*:

	Installment Method	Cost Recovery Method
A.	$2,800,000	None
B.	$2,800,000	$1,000,000
C.	$1,000,000	None

Answer: B

Under the installment method, the percentage of profit recognized in a given period equals the percentage of total cash received during the period.

Profit recognized during 2009 = 4m / 10m × (10m − 3m) = $2.8m

Under the cost recovery method, profits are only recognized once total cash received exceeds total cost.

Profit recognized during 2009 = 4m − 3m = $1m

48. Which of the following costs are *least likely* to be capitalized inventory costs?

    A. Costs of purchase.
    B. Selling and marketing costs.
    C. Costs of conversion.

    Answer: B

    All administrative overheads and selling costs cannot be included in the carrying value of inventory; they must be expensed as incurred.

49. Assume U.S. GAAP applies. A company's gross fixed assets increased from the previous year to this year, while the amount of accumulated depreciation shown on its balance sheet decreased from the previous year to the current year. Which of the following is *most likely*?

    A. There has been a purchase and sale of long-lived assets over the year.
    B. There has only been a purchase of long-lived assets over the year.
    C. There has only been an impairment of long-lived assets over the year.

    Answer: A

    The increase in gross fixed assets (historical cost) over the year indicates that the company has purchased long-lived assets during the year. Note that U.S. GAAP does not allow revaluation of fixed assets.
    Despite the asset acquisition, if accumulated depreciation has fallen over the year, the company has sold a long-lived asset as well.

50. An increase in which of the following will not always result in an improvement in a company's return on equity?

    A. Financial leverage ratio
    B. Tax burden ratio
    C. Net profit margin.

Answer: A

An increase in the financial leverage will not always lead to a higher ROE. As a company takes on more debt, its interest costs rise and the interest burden ratio falls (so does the net profit margin).

51. The net realizable value of a unit of a company's inventory is lower than its replacement cost. The replacement cost of inventory equals its original cost. Which of the following is *most likely* regarding the value of inventory recognized under IFRS and U.S. GAAP?

A. Inventory value will be the same under both.
B. Inventory value will be higher under U.S. GAAP.
C. Inventory value will be lower under U.S. GAAP.

Answer: A

- Under IFRS, inventory is valued at the lower or cost and NRV. Because NRV is lower than original cost, the company will record its inventory at NRV.
- Under U.S. GAAP, **original cost** is compared to replacement cost where replacement cost must lie between NRV minus the normal profit margin and the NRV. Because replacement cost is greater than NRV, adjusted replacement cost (market) equals NRV, and the company will record its inventory at NRV.

52. Assume U.S. GAAP applies. In a period of rising prices and stable inventory quantities, use of LIFO will *most likely* result in:

A. Lower solvency ratios.
B. Lower interest coverage ratios.
C. Lower inventory turnover ratios.

Answer: B

In a period of rising prices and stable inventory quantities, use of LIFO will result in higher solvency ratios, a higher inventory turnover ratio, and a lower interest coverage ratio (EBIT is lower under LIFO due to higher COGS).

53. Which of the following *most accurately* lists the requirements regarding accounting for financing liabilities under U.S. GAAP and IFRS?

A. The effective interest method is required under U.S. GAAP. The effective interest or the straight-line method may be used under IFRS.
B. The effective interest method is required under IFRS. The effective interest or the straight-line method may be used under U.S. GAAP.
C. The effective interest method is required under IFRS. The straight-line method is required under IFRS.

Answer: B

The effective interest method is required under IFRS and preferred under U.S. GAAP. The straight-line method is also permitted under U.S. GAAP.

54. Consider the following statements:

    Statement 1: When the tax base of a liability exceeds its carrying value, it results in a deferred tax asset.

    Statement 2: Permanent differences result in a difference between the company's statutory and effective tax rate.

    Which of the following is *most likely*?

    A. Both statements are correct.
    B. Only Statement 1 is correct.
    C. Only Statement 2 is correct.

    Answer: C

    - When the tax base of a liability exceeds its carrying value, it results in a deferred tax *liability*.
    - Statement 2 is correct.

55. Which of the following is *most likely* when a temporary difference gives rise to a deferred tax liability?

    A. Higher expenses are recognized on the financial statements than on the tax return.
    B. A liability's tax base is lower than its carrying value.
    C. Taxable income is lower than accounting profit.

    Answer: C

    A temporary difference gives rise to a deferred tax liability when:
    - *Lower* expenses are recognized on the financial statements than on the tax return.
    - A liability's tax base is *greater* than its carrying value.
    - Taxable income is lower than accounting profit.

56. Assume U.S. GAAP applies. Compared to a scenario in which it issued bonds at par, a company that issued bonds at a discount will *least likely*:

A. Report higher interest expense each year during the bond's term.
B. Report an increasing book value of the liability each year.
C. Report lower cash flow from operations.

Answer: C

Compared to a scenario in which it issues bonds at par, a company that issues bonds at a discount will record:

- Lower financing cash inflows at issuance.
- Higher interest expense every year during the term of the bonds.
- Identical financing cash outflows at maturity (par value).
- Identical operating cash outflows each year (coupon payment).

57. Recognition of a lease as a finance lease as opposed to an operating lease by the lessee will *most likely* result in a higher:

A. Debt-to-assets ratio.
B. Return on assets.
C. Current ratio.

Answer: A

- Under a finance lease, the lessee recognizes an asset and an equal-in-value liability on its books at inception of the lease. The percentage increase in debt is greater than the percentage increase in assets (for any company debt < assets). Therefore, the numerator effect dominates and the ratio increases upon recognition of a finance lease.
- Because assets increase upon recognition of a finance lease, ROA falls.
- Because current liabilities also increase upon recognition of a finance lease (current portion of lease obligation), the current ratio falls.

58. In order to inflate current-period earnings, a company would *least likely*:

A. Increase the useful life of depreciable assets.
B. Increase estimates of uncollectible accounts receivable.
C. Capitalize a cost rather than expense it.

Answer: B

- Increasing the useful life of depreciable assets would lower depreciation expense and increase net income.
- Increasing the estimated amount for the uncollectible amount would decrease net income. Capitalizing a cost rather than expensing it would increase net income.

59. Which of the following is *most likely* regarding the classification of an item as an extraordinary item?

	U.S. GAAP	**IFRS**
A.	Permitted	Not permitted
B.	Permitted	Permitted
C.	Not permitted	Permitted

Answer: A

- IFRS does not permit the classification of an expense as an extraordinary item.
- Under U.S. GAAP an item may be classified as an extraordinary item if it is unusual in nature and infrequent in occurrence.

60. Raven Inc.'s balance sheet shows property, plant, and equipment at a historical cost of $223.87 million and accumulated depreciation of $175.67 million. Depreciation expense in the most recent year was $25.89 million. The average remaining useful life of ABC's property, plant, and equipment is *closest* to:

A. 6.79 years.
B. 1.86 years.
C. 8.65 years.

Answer: B

Average remaining useful life = (Historical cost – Accumulated depreciation) / Annual depreciation = (223.87 – 175.67) / 25.89 = 1.86 years

61. What type of audit opinion is *least desired* when analyzing financial data?

A. A qualified opinion
B. An unqualified opinion
C. An adverse opinion

Answer: C

Average remaining useful life = (Historical cost – Accumulated depreciation)/Annual depreciation = (223.87 – 175.67)/25.89 = 1.86 years

62. A company sold a piece of equipment for $10,000. The historical cost of this equipment was $20,000 and accumulated depreciation on the equipment amounted to $8,000. The effect of this transaction alone is *most likely* that:

A. CFO will exceed net income by $2,000.
B. Net income will exceed CFO by $2,000.
C. CFI will decrease by $10,000.

Answer: A

Book value of equipment = \$20,000 – \$8,000 = \$12,000

Gain/(loss) on sale = \$10,000 – \$12,000 = –\$2,000

Because the company makes a loss on the sale, CFO will be *greater* than net income.

63. An upward revaluation of a long-lived asset is *least likely* to result in a decrease in:

    A. A company's debt-assets ratio.
    B. A company's return on assets in future years.
    C. A company's current ratio.

    Answer: C

    Upward revaluation of a long-lived asset has no impact on a company's current ratio.

64. The objective of financial statements *most likely* is:

    A. To provide historical trends about the company's performance.
    B. To help users in making forecasts about the future performance of the company.
    C. To provide information that is useful to a wide range of users in making economic decisions.

    Answer: C

    The objective of financial statements is to provide information that is useful to a wide variety of users in making economic decisions.

65. Any cash invested in a company by its owner is *least likely* to be accompanied by:

    A. A decrease in the firm's liabilities.
    B. A decrease in the firm's assets.
    C. An increase in the firm's assets.

    Answer: B

    Assets = Equity + Liabilities
    An increase in owners' equity cannot lead to a reduction in assets.

66. Which of the following is *least likely* regarding the perpetual and periodic inventory accounting systems:

A. If a company uses FIFO, COGS and EI are the same under the periodic and perpetual inventory systems.
B. If a company uses separate identification, COGS and EI are the same under the periodic and perpetual inventory systems.
C. If a company uses the weighted-average cost method, COGS and EI are the same as under FIFO if the periodic inventory system.

Answer: C

- If a company uses FIFO, COGS and EI are the same under the periodic and perpetual inventory systems.
- If a company uses separate identification, COGS and EI are the same under the periodic and perpetual inventory systems.
- If a company uses AVCO:
  - COGS and EI have similar values as their values under FIFO if the perpetual inventory system.
  - COGS and EI are **different** from their value under FIFO if the periodic inventory system.

67. Which of the following statements is *most accurate* under IFRS?

A. Any changes in accounting estimates are applied prospectively.
B. Any changes in accounting principles are applied prospectively.
C. Changes in accounting estimates and principles are applied retrospectively.

Answer: A

Changes in accounting estimates are applied prospectively, while changes in accounting principles are applied retrospectively.

68. Solvency refers to a company's ability to:

A. Sell its inventory quickly.
B. Meet its long-term obligations.
C. Meet its short-term obligations.

Answer: B

Solvency refers to a company's ability to meet its long-term obligations.

Questions 69–78 relate to Corporate Finance

69. Which of the following is *least likely* one of the principles of capital budgeting?

    A. The timing of cash flows is very important.
    B. Financing costs must be considered in the calculation of operating cash flows.
    C. Projects are evaluated based on incremental cash flows over and above their opportunity costs.

    Answer: B

    Financing costs should not be considered in the calculation of operating cash flows. Financing costs are considered in the discount rate (required rate of return).

70. The point of intersection between the marginal cost of capital and the investment opportunity schedule is known as the:

    A. Crossover rate.
    B. Optimal capital budget.
    C. WACC.

    Answer: B

    The optimal capital budget occurs at the point where the MCC schedule intersects the investment opportunity schedule.

71. All other factors remaining the same, which of the following statements is *most likely* regarding yields on short-term investments?

    A. The money market yield will be greater than the bond equivalent yield.
    B. The discount basis yield will be lower than the money market yield.
    C. The discount basis yield will be greater than the bond equivalent yield.

    Answer: B

    - The discount basis yield will be **lower** than the money market yield, as it is based on the face value, not the price. Because the face value of a discounted instrument is greater than its price, the discount basis yield will be **lower**.

    - The bond equivalent yield is greater than the money market yield because it is annualized over a 365-day year, whereas the money market yield uses a 360-day year.

    - The discount basis yield can be greater than or less than the bond equivalent yield.

72. Consider the following statements:

Statement 1: Any amendments to the company's bylaws typically occur at Extraordinary General Meetings (EGMs).

Statement 2: Proxy voting is adopted as a practice in order to protect the rights of creditors.

Which of the following is *most likely*?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are incorrect.

Answer: A

An amendment to corporate bylaws would normally take place during an EGM, which covers significant changes to a company, such as bylaw amendments.

Proxy voting is put in place to protect **shareholders**. Debtholders use collateral and covenants to protect their interests.

73. Michael wants to calculate the WACC for a company which has $6 million worth of debt outstanding with an interest rate of 7%. The company is expected to issue new debt at an interest rate of 8%. Assuming a tax rate of 40%, the company's after-tax cost of debt to be used in calculating the WACC is *closest* to:

A. 4.2%.
B. 7%.
C. 4.8%.

Answer: C

After-tax cost of debt = $0.08 \times (1 - 0.4) = 4.8\%$

74. A manufacturing firm issues a semi-annual coupon bond to finance a new project. The bond has a par value of $1,000, offers a coupon rate of 9%, and will mature in 15 years. Given that the bond's current market value is $1,020.63, and the applicable tax rate is 35%, the company's after-tax cost of debt is *closest* to:

A. 4.38%.
B. 8.75%.
C. 5.69%.

Answer: C

N = 30; PV = –\$1,020.63; FV = \$1,000; PMT = \$45; CPT I/Y; I/Y = 4.375

The yield to maturity on a BEY basis equals 4.375 × 2 = 8.75%. This is the before-tax cost of debt (r_d).

After-tax cost of debt = r_d (1 – t) = 8.75 (1 – 0.35) = 5.688%

75. A 180-day U.S. T-bill with a par value of \$1,000 is issued at a discount of 8%. The bond equivalent yield for this security is *closest to*:

A. 8%.
B. 8.45%.
C. 8.11%.

Answer: B

Purchase price = 1,000 – [0.08 × (180 / 360) × 1,000] = \$960

Bond equivalent yield = [(1,000 – 960) / 960] × 365 / 180 = 8.45%

76. An analyst gathers the following information about the cost of raising new debt and equity for a company:

New Debt (\$ millions)	After-Tax Cost of Debt (%)	New Equity (\$ millions)	Cost of Equity (%)
≤ 5	5	≤ 6	12
> 5	6	> 6	13

The company's target capital structure is 70% equity and 30% debt. If the company raises \$12m in financing, its cost of capital will be *closest* to:

A. 10.90%.
B. 10.20%.
C. 10.60%.

Answer: C

Break point for debt = 5 / 0.3 = \$16.67m

Because the company will only be raising \$12m (less than the break point for debt), its after-tax cost of debt equals 5%.

Break point for equity = 6 / 0.7 = \$8.57m
Because the company will be raising \$12m (more than the break point for equity) its cost of equity equals 13%.

WACC = [0.13 × 0.7] + [0.05 × 0.3] = 10.6%.

77. A company has been offered trade credit terms of “1/30 net 50.” What is the cost of trade credit for the company if it pays on the 40^{th} day?

A. 9.60%
B. 44.32%
C. 13.00%

Answer: B

Cost of trade credit = $\{1 + [0.01 / (1 - 0.01)]\}^{365/10} - 1 = 44.32\%$

78. Which of the following is *least likely* an issue in estimating a company’s cost of debt?

A. Some debt instruments may contain option-like features.
B. Some companies may use leases extensively as a source of finance.
C. Companies in different jurisdictions may face different tax rates.

Answer: C

Different tax rates across companies do not create problems in estimating the cost of debt. Once the before-tax cost of debt has been determined, it is adjusted for the company’s tax rate to determine the after-tax cost of debt.

Questions 79–90 relate to Equity

79. Consider the following statements:

    Statement 1: A stop-loss buy order is placed above the current market price.

    Statement 2: A marketable limit sell order is placed below the best bid.

    Which of the following is *most likely*?

    A. Both statements are correct.
    B. Only Statement 1 is correct.
    C. Only Statement 2 is correct.

    Answer: A

    - A stop-loss buy order is placed above the current market price by a short seller to limit her losses.
    - A marketable limit sell order is placed below the best bid so it (at least partially) executes immediately.

80. Which of the following industries is *least likely* to be very concentrated on a global scale?

    A. Oil services
    B. Branded pharmaceuticals
    C. Confections and candy

    Answer: A

    Although only a small number of companies provide a full range of services, many smaller players compete effectively in specific area in the oil services industry. Service arms of national oil companies may control significant market share in their own countries.

81. Which of the following types of indices *most likely* requires frequent rebalancing?

    A. Equal weighted
    B. Market cap weighted
    C. Price weighted

    Answer: A

    Equal weighted indices must be rebalanced whenever the relative prices of constituent securities change.

82. Consider the following statements:

Statement 1: The momentum anomaly goes against weak form EMH.

Statement 2: The size effect anomaly goes against weak form EMH.

Which of the following is *most likely*?

A. Both statements are correct.
B. Both statements are incorrect.
C. Only Statement 1 is correct.

Answer: C

The momentum anomaly asserts that investors can earn abnormal returns by purchasing stocks that have performed well in the recent past.
The size effect anomaly asserts that investors can outperform on a risk-adjusted basis by simply purchasing smaller companies.

83. If the balance in an investor's equity margin account falls below the maintenance margin, she will receive a margin call to restore at least the:

A. Initial margin.
B. Maintenance margin.
C. Variation margin.

Answer: B

If the amount in an investor's equity margin account falls below the maintenance margin she must at least deposit an amount that would restore the maintenance margin.

84. An analyst gathered the following quotes for a security from different dealers in an equity market:

	Bid Price ($)	**Ask Price ($)**
Dealer 1	34.95	35.65
Dealer 2	35.25	35.85
Dealer 3	35.15	35.50

The market bid-ask spread is *closest to*:

A. $0.55.
B. $0.90.
C. $0.25.

Answer: C

Best bid price = $35.25

Best ask price = $35.50

Therefore, market bid-ask spread = 35.50 – 35.25 = **$0.25**

85. A higher retention ratio will *most likely* result in a higher:

A. Dividend payout ratio.
B. Return on equity.
C. Growth rate.

Answer: C

- A higher retention ratio means a lower dividend payout ratio.
- A higher retention ratio increases the growth rate.

86. An analyst gathered the following information about a company:

Next year's dividend = $3.75
Risk-free rate of return = 5%
Market risk premium = 8%
Beta of company's common stock = 1.1

If the analyst estimates that the selling price of the company's stock after one year will be $43, the value of the company's common stock today is *closest to*:

A. $41.
B. $42.
C. $43.

Answer: A

Use the one-period DDM.

Cost of equity = 0.05 + 1.1 (0.08) = 13.8%

Stock's value = (3.75 / 1.138) + (43 / 1.138) = $41.08

87. XYZ Company plans not to pay out any dividends for the next four years. After four years, the company will maintain a dividend payout ratio of 45%. The company's EPS in Year 4 is expected to be $4.50, and is expected to grow at 7% forever. Given a cost of equity of 12%, the current value of the stock is *closest to*:

A. $25.74.
B. $27.54.
C. $24.59.

Answer: B

EPS in Year 5 = 4.5 × 1.07 = $4.815
Dividend in Year 5 = 4.815 × 0.45 = $2.16675
Price at the end of Year 4 = 2.17 / (0.12 − 0.07) = $43.335
Current value of stock = 43.34 / $(1.12)^4$ = $27.54

88. Consider the following statements:

Statement 1: Commercial industry classification systems are reviewed and updated less frequently than government industry classification systems.

Statement 2: Commercial industry classification systems do not distinguish between for-profit and not-for-profit organizations.

Which of the following is *most likely*?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are incorrect.

Answer: C

Commercial industry classification systems are reviewed and updated more frequently than government industry classification systems.

Government industry classification systems do not distinguish between for-profit and not-for-profit organizations.

89. Putable common shares are *most likely* to be exercised when the exercise price is:

A. Lower than the stock's intrinsic value.
B. Higher than the stock's market price.
C. Higher than the stock's intrinsic value.

Answer: B

Holders of putable common shares are likely to sell the shares back to the company when the stock price is lower than the exercise price.

90. The final step in the top-down approach to security valuation is *most likely*:

A. Company analysis.
B. Industry analysis.
C. Economy analysis.

Answer: A

Company analysis is the final step of the top-down approach.

Questions 91–104 relate to Fixed Income

91. Which of the following bonds is *most likely* to exhibit the greatest interest rate risk, assuming that the yield curve is flat?

    Bond A is a 5%, 20-year bond with no embedded options.
    Bond B is a 6%, 18-year bond with no embedded options.
    Bond C is a 5.5%, 15-year bond with no embedded options.

    A. Bond A
    B. Bond C
    C. Bond B

    Answer: A

    Bond A will exhibit the *greatest* interest rate, risk assuming the yield curve is flat, because it has the *lowest* coupon rate and the *longest* term to maturity.

92. Consider the following statements:

    Statement 1: Sinking fund arrangements are not likely to reduce credit risk.

    Statement 2: Sinking fund arrangements are not likely to reduce reinvestment risk.

    Which of the following is *most likely*?

    A. Both statements are correct.
    B. Only Statement 1 is correct.
    C. Only Statement 2 is correct.

    Answer: C

    - Sinking fund provisions reduce credit risk, as investors receive interest *and principal* repayments **during** the term of the bonds.
    - Sinking funds *increase* reinvestment risk, as interest and principal repayments may have to be reinvested at lower rates if interest rates have fallen since the time of purchase.

93. The fact that ELNs are generally principal protected means that investors are *most likely* protected from:

    A. A decline in the value of the index since issuance.
    B. Credit risk of the issuer.
    C. A decline in the value of the index since issuance and credit risk of the issuer.

Answer: A

Equity-linked notes guarantee investors repayment of 100% of principal even if the value of the index has fallen since issuance. However, the principal payment is still subject to credit risk of the issuer. If the issuer defaults, the investor may not receive anything even if the underlying index has increased in value.

94. Consider the following statements:

Statement 1: The primary driver of yields on CDs is the credit-worthiness of the issuing bank.

Statement 2: Euro commercial paper is quoted on an add-on yield basis.

Which of the following is *most* likely?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are correct.

Answer: C

The credit-worthiness of the issuing bank has more of an influence on the yield on a certificate of deposit than the term to maturity.
Euro commercial paper is quoted on an add-on yield basis, while U.S. commercial paper is a pure discount instrument.

95. Consider the following statements:

Statement 1: When the dealer is borrowing cash and providing collateral, it is known as a reverse repo.

Statement 2: The greater the credit risk in the collateral, the higher the repo rate.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.
B. Only Statement 2 is incorrect.
C. Both statements are correct.

Answer: A

Standard practice is to define the transaction based on the perspective of the dealer. If the dealer is borrowing cash and providing collateral, it is known as a repurchase agreement. If the dealer is lending cash and accepting collateral, it is known as a reverse repurchase agreement.
Statement 2 is indeed correct. Repo rates increase with the level of credit risk in the collateral.

96. Consider the following statements:

Statement 1: The accrued interest on a bond does not depend on the yield to maturity.

Statement 2: The interest yield on a bond is computed by dividing the annual cash coupon payment by the full price.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.
B. Only Statement 2 is incorrect.
C. Both statements are correct.

Answer: B

The accrued interest on a bond is the same regardless of the yield to maturity. The accrued interest calculation does not consider the time value of money.

The interest yield (also known as the current yield) on a bond is computed by dividing the annual cash coupon payment by the **flat** price.

97. Consider the following information:

Statement 1: Generally speaking, the higher the level of interest rates, the smaller the difference between the stated annual rates for any two periodicities.

Statement 2: The feature that differentiates spot rates from yields to maturity on coupon bonds is that spot rates are yields that have no element of reinvestment risk.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.
B. Only Statement 2 is incorrect.
C. Both statements are correct.

Answer: A

Generally speaking, the **lower** the level of interest rates, the smaller the difference between the stated annual rates for any two periodicities.
Spot rates have no element of reinvestment risk, as they represent yields on zero-coupon bonds. Yields to maturity on coupon-bonds make the assumption that all interim cash flows are reinvested at the stated YTM until maturity.

98. For putable bonds, the z-volatility spread will *most likely* be:

A. Lower than the option-adjusted spread.
B. Higher than the option-adjusted spread.
C. Equal to the option-adjusted spread.

Answer: A

For putable bonds the z-spread is lower than the option-adjusted spread. The yield on the putable bond must be lower than the yield on a bond with no embedded options to compensate the issuer for the option that it has sold to the investor.

99. An analyst gathers the following information:

3-year spot rate = 4%
5-year spot rate = 5%
2-year forward rate 5 years from today = 3.5%
3-year forward rate 7 years from today = 4.25%
2-year forward rate 8 years from today = 6%

Given that all the above spot rates are effective annual rates, the 8-year spot rate is *closest to*:

A. Cannot be calculated based on the given information.
B. 4.095%.
C. 4.624%.

Answer: B

$$(1+{}_8S_0)^8 = \frac{(1+{}_5S_0)^5(1+{}_2f_5)^2(1+{}_3f_7)^3}{(1+{}_2f_8)^2}$$

$${}_8S_0 = 4.095\%$$

100. An analyst calculates that the price of an option-free bond with a 5% coupon would experience a 13.5% change if yields were to increase by 100 basis points. If yields were to decrease by 100 basis points instead, the bond's price would *most likely*:

A. Increase by 13.5%.
B. Increase by more than 13.5%.
C. Decrease by more than 13.5%.

Answer: B

For an option-free bond, the percentage price decrease from an increase in interest rates is lower than the percentage price increase from a decrease in interest rates. Because the bond would fall by 13.5% if rates increased by 100 bps, it would increase by more than 13.5% if rates fell by 100 bps.

101. Consider a newly issued, seven-year, 5% annual-pay bond that is priced at 106 per 100 of par to yield 4%. The price value of a basis point for this bond is *closest* to:

A. \$0.02.
B. \$0.06.
C. \$0.12.

Answer: B

PV_+ can be calculated as:

N = 7; FV = 100; PMT = 4; I/Y = 4.01; CPT PV; PV = \$105.94

PV_- can be calculated as:

N = 7; FV = 100; PMT = 4; I/Y = 3.99; CPT PV; PV = \$106.06

The price value of a basis point can be computed as:

PVBP = (106.06 – 105.94) / 2 = \$0.06 per 100 of par value

102. Consider the following statements:

Statement 1: All other things remaining the same, a bond with higher convexity will outperform one with lower convexity in both bull and bear markets.

Statement 2: Callable bonds exhibit negative convexity at low yields, but traditional fixed-rate bonds and putable bonds exhibit positive convexity at all yield levels.

Which of the following is *most likely*?

A. Only Statement 1 is correct.
B. Only Statement 2 is correct.
C. Both statements are correct.

Answer: C

The greater the convexity of a bond, the greater the price appreciation when yields decrease and the lower the price depreciation when yields increase.

Callable bonds exhibit negative convexity at low yield levels. As it becomes increasingly likely that the issuer will exercise the embedded call option, the call price acts as a cap on the bond's value and the slope of the price-yield profile flattens (the rate of change of duration becomes negative). Traditional fixed-rate bonds and putable bonds always have positive convexity.

103. If the coupon rate on a bond is greater than its current yield, the bond is *most likely* trading at

A. A premium.
B. A discount.
C. Par.

Answer: A

When the coupon rate on a bond is greater than its current yield, the bond is trading at a premium to its par value.

104. The annual yield-to-maturity, stated with a periodicity of 4, for a five-year, zero-coupon bond prices at 65 per 100 of par value is *closest to*:

A. 2.177%.
B. 2.25%.
C. 8.71%.

Answer: C

$PV = FV / (1 + r)^N$
$65 = 100 / (1 + r)^{4 \times 5}$
$r = 2.177\%$

More simply: N = 20; FV = 100; PV = –65; CPT I/Y; I/Y = 2.177%
$2.177\% \times 4 = 8.71\%$

Questions 105–110 relate to Derivatives

105. A synthetic zero-coupon risk-free bond can be constructed by going:

A. Long on a put and call option, and short on the underlying stock.
B. Long on a call option and the underlying stock, and short on a put option.
C. Long on a put option and the underlying stock, and short on a call option.

Answer: C

A synthetic zero-coupon risk-free bond can be created by going long on a put option and the underlying stock and going short on a call option. $X/(1 + R_f)^T = P + S - C$

106. The fixed-rate payer on a plain-vanilla interest rate swap will *most likely* receive a payment on a settlement date if the swap fixed rate:

A. Is greater than the floating rate on the settlement date.
B. Is lower than the floating rate on the settlement date.
C. Was lower than the floating rate on the previous settlement date.

Answer: C

Payments on interest rate swaps are based on the floating rate at the previous settlement date (t-1). The fixed-rate payer would receive a payment if the swap fixed rate were lower than the floating rate.

107. All other factors constant, an increase in volatility of the underlying will *most likely*:

A. Increase the price of calls, but decrease the price of puts.
B. Decrease the price of calls, but decrease the price of puts.
C. Increase the prices of both calls and puts.

Answer: C

An increase in volatility of the underlying increases the value of both calls and puts.

108. Consider the following statements:

Statement 1: There is never a reason to exercise an American call option early.

Statement 2: There is never a reason to exercise an American put option early.

Which of the following is *most likely* if the underlying on the options is a non-dividend-paying stock?

A. Both statements are correct.
B. Both statements are incorrect.
C. Only Statement 2 is incorrect.

Answer: C

- At times it may be beneficial to exercise an American option on a dividend-paying stock early. However, there is never a reason to exercise an American call option on a non-dividend-paying stock before expiration.
- An American put option may be exercised early if the underlying company is in or nearing bankruptcy.

109. Consider the following statements:

Statement 1: In a credit default swap, the protection seller is betting that the reference entity will default.
Statement 2: All other things remaining the same, an American option must have the same value as a European option at expiration.

Which of the following is *most likely*?

A. Both statements are correct.
B. Both statements are incorrect.
C. Only one statement is correct.

Answer: C

- In a credit default swap, the protection seller is betting that the reference entity will not default. Effectively, it is providing insurance against credit risk to the protection buyer.
- At expiration, all options are worth their exercise value.

110. An analyst sells a call option for $7 on a stock that he already owns. Assuming that the exercise price of the option is $88 and that the stock currently trades at $86, her breakeven point on the strategy is *closest to*:

A. $79.
B. $93.
C. $95.

Answer: A

Breakeven point of a covered call strategy = S – C = 86 – 7 = $79

Questions 111–114 relate to Alternative Investments

111. Which of the following categories of hedge fund strategies would volatility strategies *most likely* be classified under?

    A. Relative value strategies
    B. Event driven strategies
    C. Equity hedge strategies

    Answer: A

    Volatility strategies are categorized under **relative value strategies**.

112. Distressed investing is *least likely* an example of:

    A. Hedge fund strategies.
    B. Private equity strategies.
    C. Real estate strategies.

    Answer: C

    Private equity strategies include LBOs, venture capital, development capital, and distressed investing. Distressed investing is also a hedge fund strategy that falls under event-driven strategies.

113. When the market for a commodity is in backwardation, the roll yield is *most likely*:

    A. Negative.
    B. Positive.
    C. Zero.

    Answer: B

    In a futures market that is in backwardation, the futures price is lower than the spot price. This results in a positive roll yield for investors as the futures price converges toward the spot price.

114. Private investments in public equities (PIPEs) are *most likely* examples of which of the following private equity investment strategies?

A. Minority equity investing
B. Distressed investing
C. Venture capital investing

Answer: A

Private investments in public equities (PIPEs) are examples of development capital or **minority equity investing** where more mature companies seek private equity capital.

Questions 115–120 relate to Portfolio Management

115. Which of the following is *most likely* an example of unique needs and preferences that affect investors' asset allocation decisions?

A. A desire to abstain from investing in companies that pollute the environment extensively
B. A desire to invest at least 10% of the portfolio in cash
C. A desire to invest in municipal securities to benefit from their tax-exempt status

Answer: A

Excluding investments from a portfolio on the basis of personal or socially conscious reasons is an example of how unique preferences impose constraints on investments.

116. Consider the following statements:

Statement 1: A risk-averse investor can attain a better risk-return tradeoff by investing a portion of his portfolio in Asset A, which is more risky than his current portfolio, only if the correlation between his current portfolio and Asset A is negative.

Statement 2: A more risk-averse investor will have a steeper indifference curve than a less risk-averse investor.

Which of the following is *most likely*?

A. Both statements are correct.
B. Only Statement 2 is correct.
C. Both statements are incorrect.

Answer: B

- A risk-averse investor can attain a better risk-return tradeoff by investing a portion of his portfolio is a more risky asset as long as the correlation between his current portfolio and the asset is less than 1.
- Statement 2 is correct.

117. The slope of the characteristic line *most likely* reflects:

A. The beta of the portfolio.
B. The total risk of the portfolio.
C. The unsystematic risk in the portfolio.

Answer: A

The characteristic line is the resulting line of best fit when a portfolio's returns are regressed against the market. The slope of the line equals the beta of the portfolio.

118. Elena wants to evaluate the performance of her portfolio manager and gathers the following information:

Portfolio Return = R_P = 17%
σ_p = 28%
β = 0.8
Market return = R_M = 9%
σ_m = 19%

Given a risk-free rate of 6%, the Treynor ratio and M^2 are *closest to*:

	Treynor Ratio	**M^2 (%)**
A.	0.1375	5.21
B.	0.3929	13.21
C.	0.1375	4.46

Answer: C

Treynor ratio = $(R_p - R_f) / \beta = (17\% - 6\%) / 0.8 = 0.1375$

$M^2 = [(R_p - R_f) \times (\sigma_m / \sigma_p)] - (R_m - R_f)$

$M^2 = [(17\% - 6\%) \times (19\% / 28\%)] - (9\% - 6\%) = 4.46\%$

119. Which of the following *most likely* have the shortest time horizon for their investment portfolios?

A. Banks
B. Pension plans
C. Foundations

Answer: A

Pension plans and foundations typically have very long time horizons, whereas banks typically have shorter investment horizons.

120. Temporary deviations from the portfolio's strategic asset allocation in pursuit of short-term gains are known as:

A. Tactical asset allocation.
B. Risk budgeting.
C. Portfolio reconstitution.

Answer: A

A portfolio manager may deliberately deviate from the strategic asset allocation over the short term to enhance portfolio returns. This is known as the portfolio's tactical asset allocation.

WILEY